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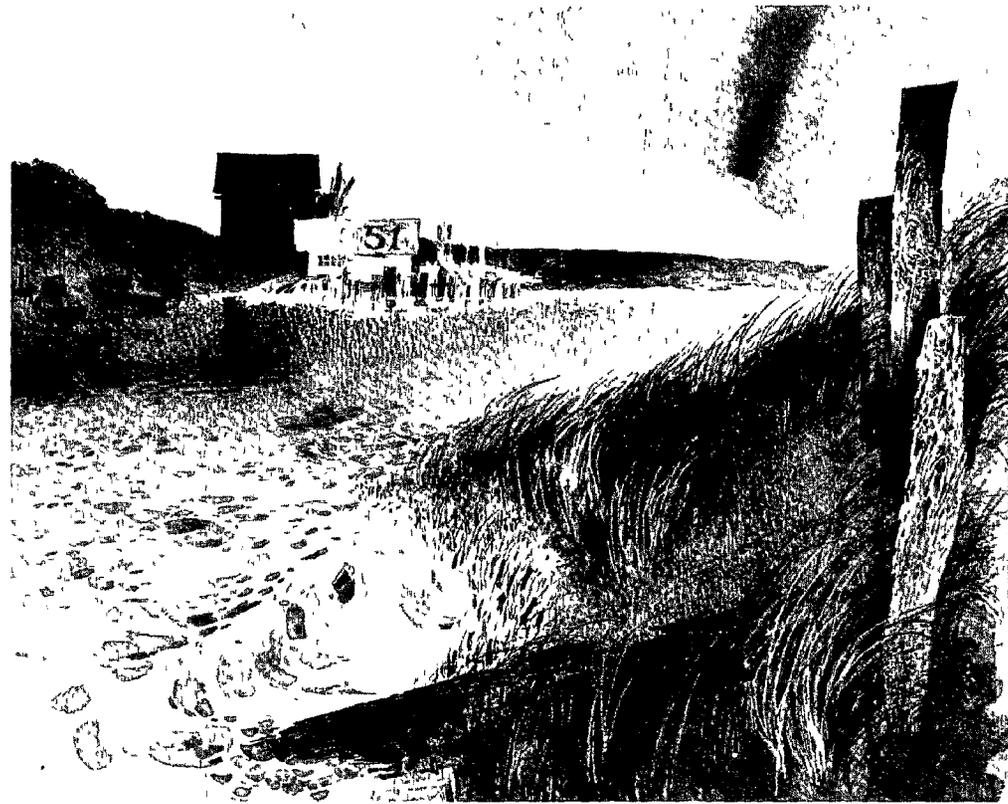
Coastal Zone
Information
Center

LANCASTER COUNTY TIDAL MARSH INVENTORY

FEB 18 1975

Special Report No. 45 in
Applied Marine Science and Ocean Engineering

Gene M. Silberhorn



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VIRGINIA INSTITUTE OF MARINE SCIENCE
Gloucester Point, Virginia 23062

DECEMBER 1973

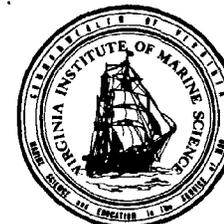
03796

LANCASTER COUNTY TIDAL MARSH INVENTORY

Special Report No. 45 in
Applied Marine Science and Ocean Engineering

Gene M. Silberhorn

U. S. DEPARTMENT OF COMMERCE NOAA
COASTAL SERVICES CENTER
2234 SOUTH HOBSON AVENUE
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VIRGINIA INSTITUTE OF MARINE SCIENCE
Gloucester Point, Virginia 23062

Dr. William J. Hargis, Jr., Director

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Acknowledgments

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Thanks also goes to Col. Dawes, Mr. James Mercer and Mr. Thomas Barnard for their assistance in the field.

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Finally I thank Mrs. Beverly Bennett and Mrs. Judy Hudgins for typing the data tables, drafts and final manuscript.

Lancaster County Tidal Marsh Inventory

Table of Contents

	Page
Acknowledgments	ii
Introduction	1
Marsh Plants	4
Reference Map of Wetland Systems	7
A. Section I: Fleets Bay Area	8
Part 1: Indian Creek to Tabbs Creek	9
Part 2: Little Bay - Fleets Island Area	13
B. Section II: Rappahannock Bridge Area	24
C. Section III: Carter Creek	28
D. Section IV: Corrotoman River	34
Part 1: Mouth and Eastern Shoreline	35
Part 2: Eastern Branch	40
Part 3: Western Branch (Eastern Shoreline)	45
Part 4: Belwood and Lancaster Swamps	50
Part 5: Little Branch - Western Branch (Western Shoreline)	53
Part 6: Mouth and Western Shoreline	59
E. Section V: Rappahannock River	64
Part 1: Wyatt Creek to Paynes Creek	65
Part 2: Greenvale Creek to Cage Creek	71
F. Section VI: Belle Isle - Lancaster Creek Area	74
Part 1: Belle Isle - Deep Creek Area	75
Part 2: Lancaster Creek Area	87

Introduction

Since the legislation of the Virginia Wetlands Act on July 1, 1972, it has become increasingly important that the concerned public becomes more aware of the many aspects of Virginia's tidal wetlands, especially in their immediate area.

Under Section 62.1-13.4 of the Wetlands Act, the Virginia Institute of Marine Science is obligated to inventory the tidal wetlands of the Commonwealth. The Lancaster County Wetlands Commission, one of the first to be organized since the legislation of the Wetlands Act, asked VIMS for an inventory of their county's marshes. This report is the first in a series of wetland reports initiated by the Inventory and Evaluation Program, Wetlands Section, VIMS.

Presently, a study titled "Guidelines for the Evaluation of Wetlands" has been drafted by the staff of the Wetlands Section at VIMS and is awaiting editing and approval by the Virginia Marine Resources Commission.

It is our desire that this report and forthcoming guidelines will be helpful in management considerations of the wetlands of Lancaster County.

Methods

Field notes were taken and vegetation maps of 74 marshes were drawn in the field. These maps offer a visual characterization of vegetation patterns and community zonation of various marshes which will be useful in evaluating wetlands. Aerial photographs and topographic maps were consulted in order to obtain wetland locations and basic composition of the vegetation. Acreages and outlines were obtained from these sources as well as from field estimates.

Marshes $1/4$ of an acre or larger are designated by number. Many marshes smaller than $1/4$ acre (usually narrow fringing marshes) are designated by the same symbol (solid black) as the larger marshes on the section maps. Information such as individual marsh acreage, marsh type (plant community) percentage and

acreage, water-marsh interface, interface marsh area ratio and other observations are recorded in tabular form. Subtotals of individual marshes and marsh types are recorded according to sections and subdivisions of these sections.

The tables, for the most part, are self-explanatory. The terms water-marsh interface and interface marsh area ratio require some explanation. The first term, water-marsh interface, is the linear length in feet that a marsh fronts on a tidal river, stream or channel that is at least 40 feet wide, the minimum width that can be measured on a topographic map. This factor is important for management purposes in that marshes that are contiguous to tidal waters are considered to be of high value as detritus contributors to the marine food web. Also, marshes that have a shoreline interface that is favorably comparable to its total area are of high value. For example, a three acre marsh fronting on 3,000 feet of tidal water is more desirable than a three acre marsh with only 300 feet of shoreline. Therefore, the interface marsh area ratio is another parameter which should be considered in estimating a value of a marsh. These factors will be utilized by VIMS in the evaluation of all the marshes in Tidewater Virginia after the inventory studies of the entire region are completed.

This report is arranged primarily according to wetland systems organized in sections. The six sections presented here are largely natural systems such as the Corrotoman River, Carter Creek, Lancaster Creek, and the Fleets Bay Area drainage system. The study begins with marsh number one (1) in Indian Creek (Section I, Fleets Bay Area), which is the Lancaster-Northumberland County line. Continuing from this point, the marshes are numbered in sequence along the tidal margin of the county to marsh number 212 in the upper reaches of Lancaster Creek (Section VI, Belle Isle - Lancaster Creek Area). The Lancaster-Richmond County line runs down the middle of this creek.

For better understanding of Virginia's wetlands and Virginia's Wetlands Act, the following papers are highly recommended:

Local Management of Wetlands
Environmental Considerations
Special Report No. 35
Kenneth Marcellus, George Dawes and
Gene Silberhorn
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

Coastal Wetlands of Virginia Interim Report
Marvin Wass and Thomas Wright, December 1969
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

Coastal Wetlands of Virginia Interim Report No.2
Kenneth Marcellus
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

MARSH PLANTS

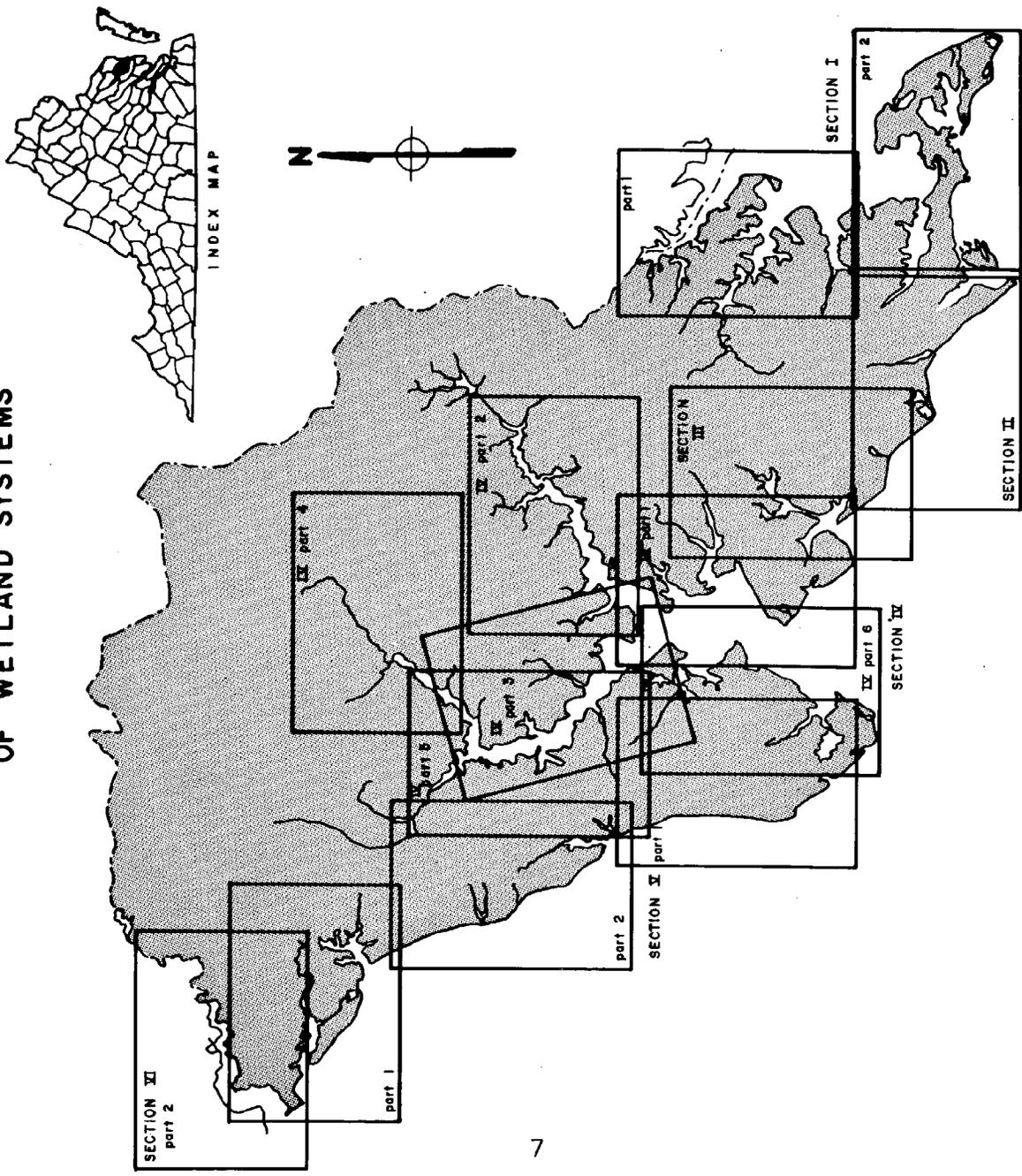
Abbreviations, Common Names and Scientific Names as Found in the Data Tables

Sa	Saltmarsh Cordgrass	<u>Spartina alterniflora</u> Loisel.
Jr	Black Needlerush	<u>Juncus roemerianus</u> Scheele.
Md	Saltgrass Meadow	Saltgrass <u>Distichlis spicata</u> (L.) Greene Saltmeadow Hay <u>Spartina patens</u> (Aiton) Muhl.
Sb	Saltbushes	Marsh Elder <u>Iva frutescens</u> L. Groundsel Tree <u>Baccharis halimifolia</u> L.
Sc	Big Cordgrass	<u>Spartina cynosuroides</u> (L.) Roth.
a	Saltmarsh Bulrush	<u>Scirpus robustus</u> Pursh.
b	Saltmarsh Fleabane	<u>Pluchea purpurascens</u> (Swartz) DC.
c	Saltmarsh Aster	<u>Aster tenuifolius</u> L.
d	Cattail	<u>Typha angustifolia</u> L. <u>Typha latifolia</u> L.
e	Marsh Hibiscus	<u>Hibiscus moscheutos</u> L.
f	Water Hemp	<u>Amaranthus cannabinus</u> (L.) J.D. Sauer
g	Switch Grass	<u>Panicum virgatum</u> L.
h	Foxtail Grass	<u>Setaria geniculata</u> (Lam.) Beauvois.
i	Arrow Arum	<u>Peltandra virginica</u> (L.) Kunth.
j	Pickereel Weed	<u>Pontederia cordata</u> L.
k	Reed Grass	<u>Phragmites communis</u> Trinius.
l	Olney Threesquare	<u>Scirpus olneyi</u> Gray
m	Marsh Mallow	<u>Kosteletskya virginica</u> (L.) Presl.

MARSH PLANTS (Continued)

n	Saltmarsh Loosestrife	<u>Lythrum lineare</u> L.
o	Smartweed	<u>Polygonum</u> spp.
p	Wild Rice	<u>Zizania aquatica</u> L.
q	Sea Lavender	<u>Limonium carolinianum</u> (Walter) Britton.
r	Marsh Pink	<u>Sabatia stellaris</u> Pursh.

LANCASTER COUNTY
REFERENCE MAP
OF WETLAND SYSTEMS



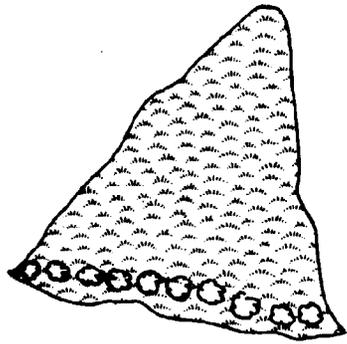
Section I
Fleets Bay Area

Although the Fleets Bay Area is characterized by a rather extensive drainage system (Indian Creek, Dymmer Creek, Tabb's Creek, Antipoison Creek, Little Oyster Creek and Windmill Creek), there are relatively few marshes found there. Most of these marshes are small and are situated in the upper end of the creeks and coves. However, despite the size, marshes of this type are quite productive in that the vegetation is usually dominated by saltmarsh cordgrass (Spartina alterniflora).

In contrast, the larger marshes in this section are vegetated by large stands of black needlerush (Juncus roemerianus). This rush is not regarded as important as saltmarsh cordgrass from the standpoint of productivity and waterfowl food. The large marshes represent 66% (137 acres) of the total marsh acreage (197) in this section.

There are indications that previous dredging operations have eliminated or partially eliminated several small marshes in this system. This fact is particularly in evidence along Tabb's Creek. Shoreline development in the above six-creek system is not unlike that found in Carter Creek where the marshes are relatively small and scattered.





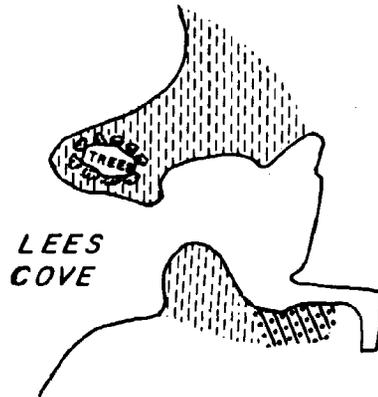
RONES BAY

NO. 3



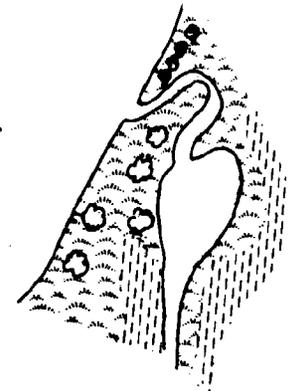
DYMER CREEK

NO. 7



LEES COVE

NO. 4



TABBS CREEK

NO. 12

- | | |
|---|---------------------------|
|  | SALTMARSH CORDGRASS |
|  | BLACK NEEDLERUSH |
|  | SALTMADOW HAY - SALTGRASS |
|  | SALTBUSH |

Section I. Fleets Bay Area Part 1. Indian Creek to Tabb's Creek

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations	
			%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres				
1	Waverly Cove	1.5	90	1.3									b,c 10	.1	800	533		
2	Pitmans Cove Indian Cr.	3	90	2.7									f 10	.3	1600	533	Series of small marshes in cove	
3	Rone Bay	.5	80	.4					20	.1					400	800		
4	Lee's Cove Dymer Creek	2.5	10	.2	75	1.9	10	.2	5	.1					1600	640	Series of small marshes in cove	
5	Johnson Cove Dymer Creek	2	90	1.8							10	.2			1200	600		
6	Dymer Creek	1	100	1											700	700		
7	Dymer Creek	.75	40	.3					50	.4			a 10	.1	600	800		
8	Ashley Cove Dymer Creek	10	10	1					90	9.0					600	60		
9	Tabb's Creek	1.5	90	1.3			10	.1							1000	666	Long, narrow	
10	Tabb's Creek	.5	90	.4					10						600	1200		
11	Tabb's Creek	.25	90	.2					10	.2					100	400		
12	Tabb's Creek	1.5	40	.6	40	.6			20	.3					500	333		
	Sub-total Section I Part 1	25		11.20		2.5		.3		10.1		.2		.5				

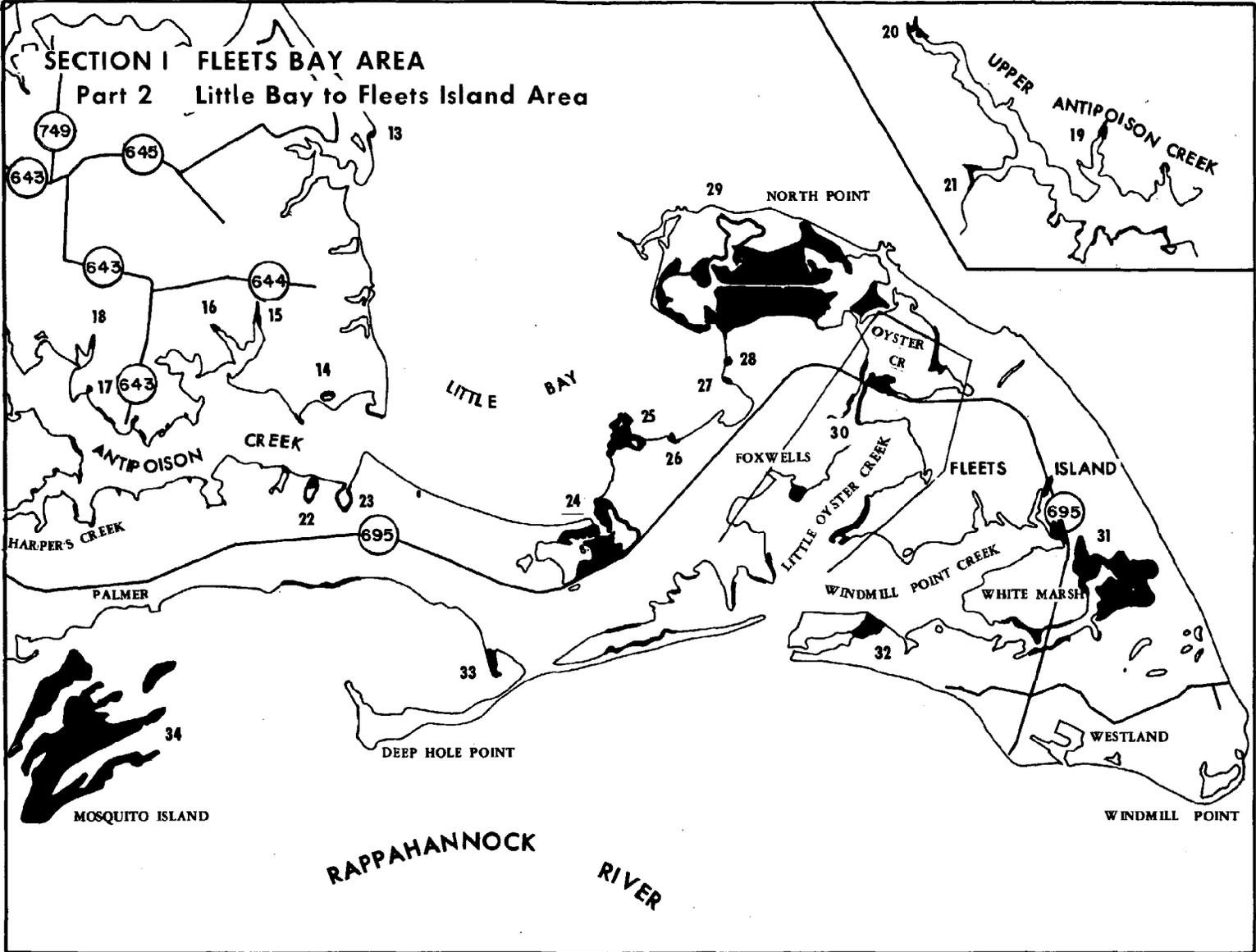
*Water Interface (ft.)** Interface/Area Ratio
(feet/acre)

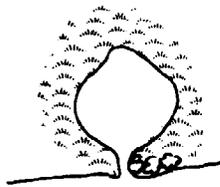
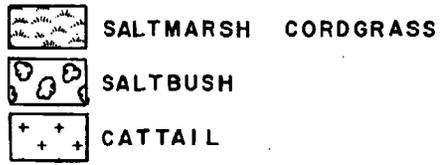
Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane

c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum

j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed

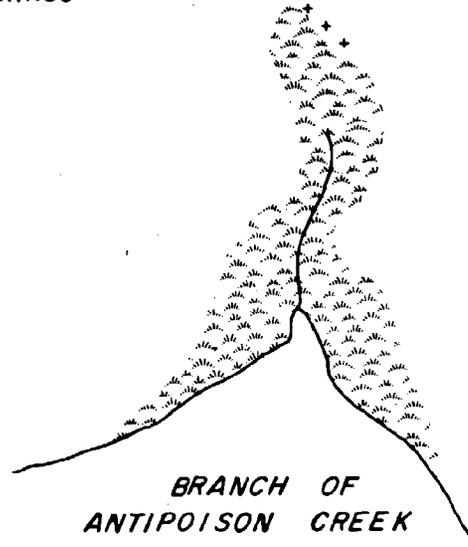
p = Wild Rice
q = Sea Lavender
r = Marsh Pink





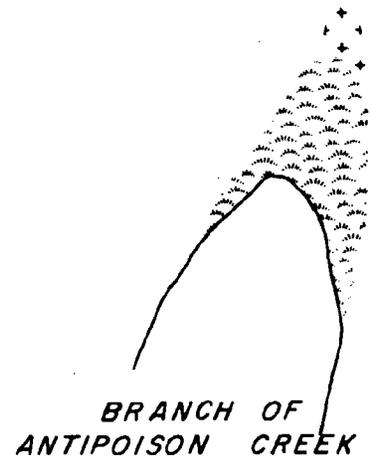
ANTIPOISON CREEK

NO. 14



BRANCH OF
ANTIPOISON CREEK

NO. 15



BRANCH OF
ANTIPOISON CREEK

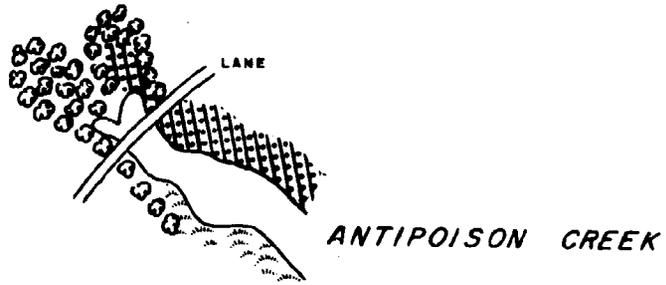
NO. 19

Section I. Part 2. Little Bay - Fleets Island Area

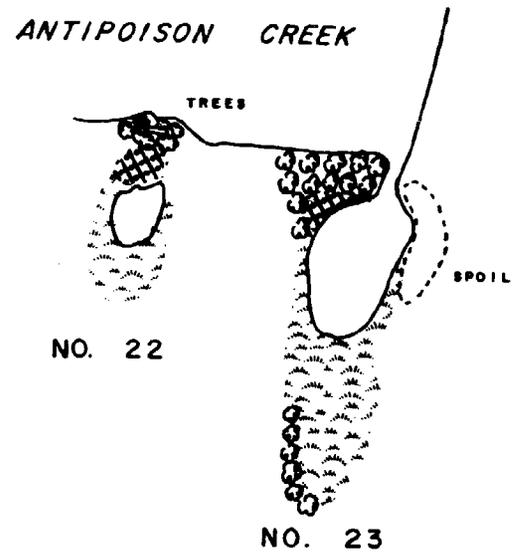
#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres			
13	Antipoison Neck	3	90	2.7	5	.1					5	.1			500	167	Shoal
14	Antipoison Creek	.5	90	.4					10						600	1200	
15	Antipoison Creek	1	95	.9									d 5		600	600	
16	Antipoison Creek	.5	100	.5											200	400	Eroded clumps
17	Antipoison Creek	.25													NA	NA	Dredged marsh
18	Antipoison Creek	.5	60	.3	40	.2									200	400	
19	Antipoison Creek	.5	75	.4									d 25	.1	300	600	

*Water Interface (ft.) **Interface/Acre Ratio (feet/acre)

- | | | | |
|--------------------------|---------------------|---------------------------|------------------|
| Sa = Saltmarsh Cordgrass | c = Saltmarsh Aster | j = Pickerel Weed | p = Wild Rice |
| Jr = Black Needlerush | d = Cattail | k = Reed Grass | q = Sea Lavender |
| Md = Saltgrass Meadow | e = Marsh Hibiscus | l = Olney Threesquare | r = Marsh Pink |
| Sb = Saltbushes | f = Water Hemp | m = Marsh Mallow | |
| Sc = Big Cordgrass | g = Switch Grass | n = Saltmarsh Loosestrife | |
| a = Saltmarsh Bulrush | h = Foxtail Grass | o = Smartweed | |
| b = Saltmarsh Fleabane | i = Arrow Arum | | |

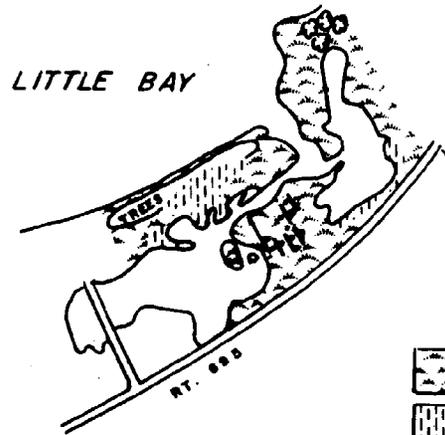


NO. 20



NO. 22

NO. 23



NO. 24

LITTLE BAY



NO. 25

- | | |
|--|---------------------------|
| | SALTMARSH CORDGRASS |
| | BLACK NEEDLERUSH |
| | SALTMADOW HAY |
| | SALTMADOW HAY - SALTGRASS |
| | SALTBUSH |

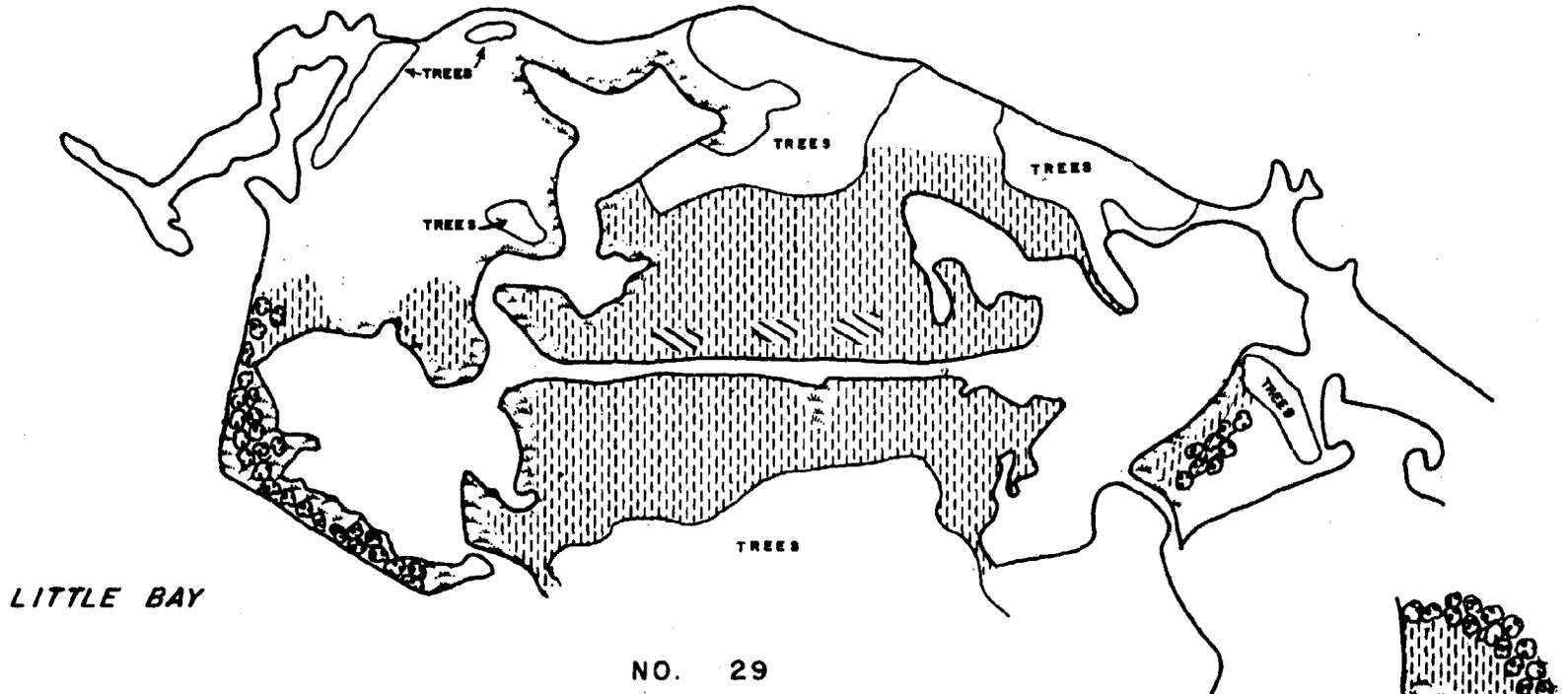
Section I. Part 2. Little Bay - Fleets Island Area

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres											
20	Antipoison Creek	2	30	.6			35	.7	35	.7					1200	600	Recent bridge and lane b,c
21	Antipoison Creek	.5	90	.4									e 10		700	1400	
22	Antipoison Creek	.5	60	.3			35	.2	5						200	400	
23	Mouth Antipoison	1.5	60	.9			10	.1	30	.4					1200	800	Dredged area and spoil b,c
24	Little Bay	4	60	2.4	20	.8	20	.8							4000	1000	gb, b, c
25	Little Bay	2.5	65	1.6	25	.6			10	.2					1200	480	c
26	Little Bay	1	30	.3			30	.3	30	.3			a 10	.1	100	100	b, c

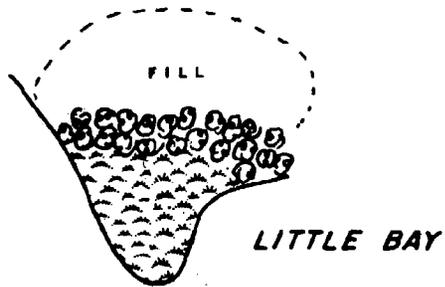
*Water Interface (ft.)**Interface/Ares Ratio (feet/acre)

Sa = Saltmarsh Cordgrass c = Saltmarsh Aster j = Pickerel Weed p = Wild Rice
 Jr = Black Needlerush d = Cattail k = Reed Grass Q = Sea Lavender
 Md = Saltgrass Meadow e = Marsh Hibiscus l = Olney Threesquare r = Marsh Pink
 Sb = Saltbushes f = Water Hemp m = Marsh Mallow
 Sc = Big Cordgrass g = Switch Grass n = Saltmarsh Loosestrife
 a = Saltmarsh Bulrush h = Foxtail Grass o = Smartweed
 b = Saltmarsh Fleebene i = Arrow Arum

CHESAPEAKE BAY

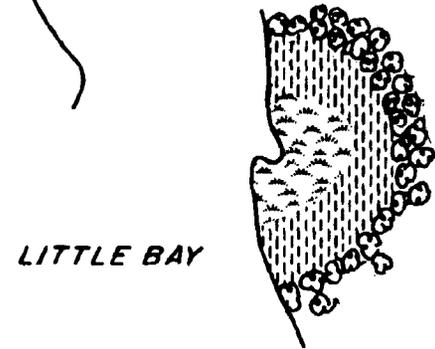


NO. 29

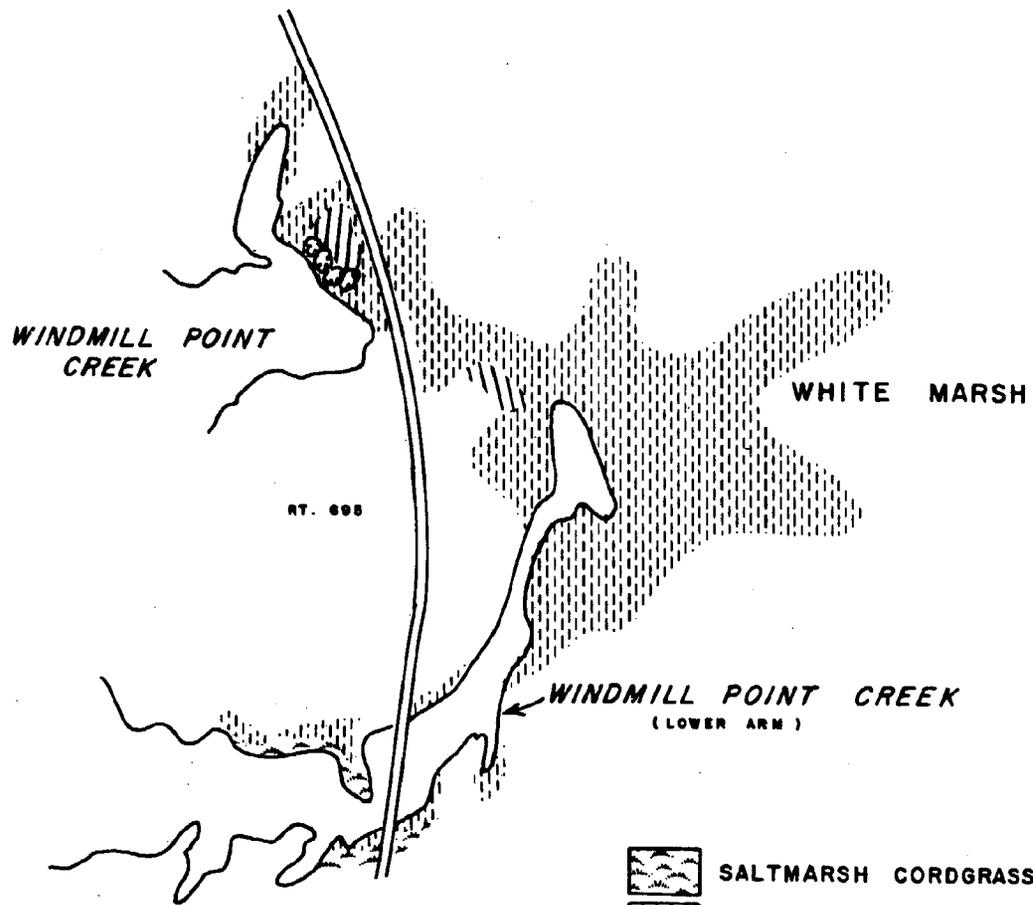


NO. 27

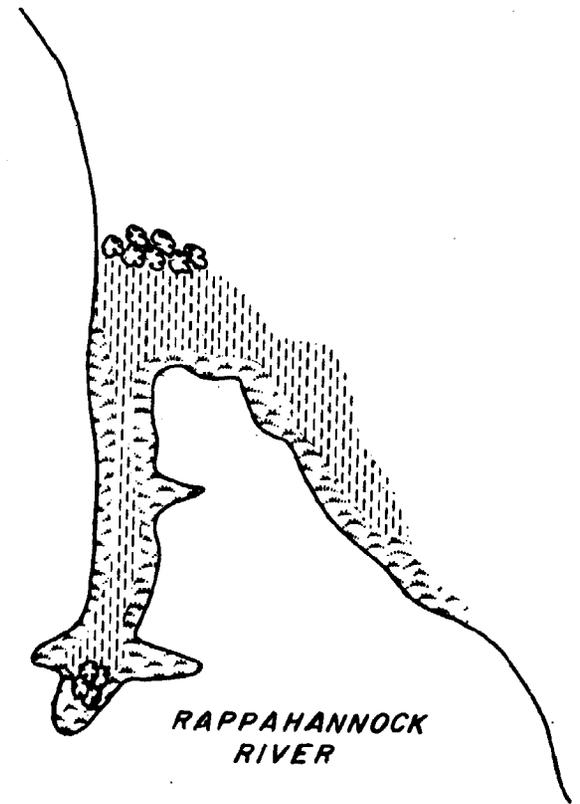
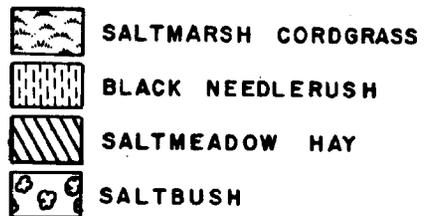
-  SALTmarsh CORDGRASS
-  BLACK NEEDLERUSH
-  SALTMEADOW HAY
-  SALTbush



NO. 28

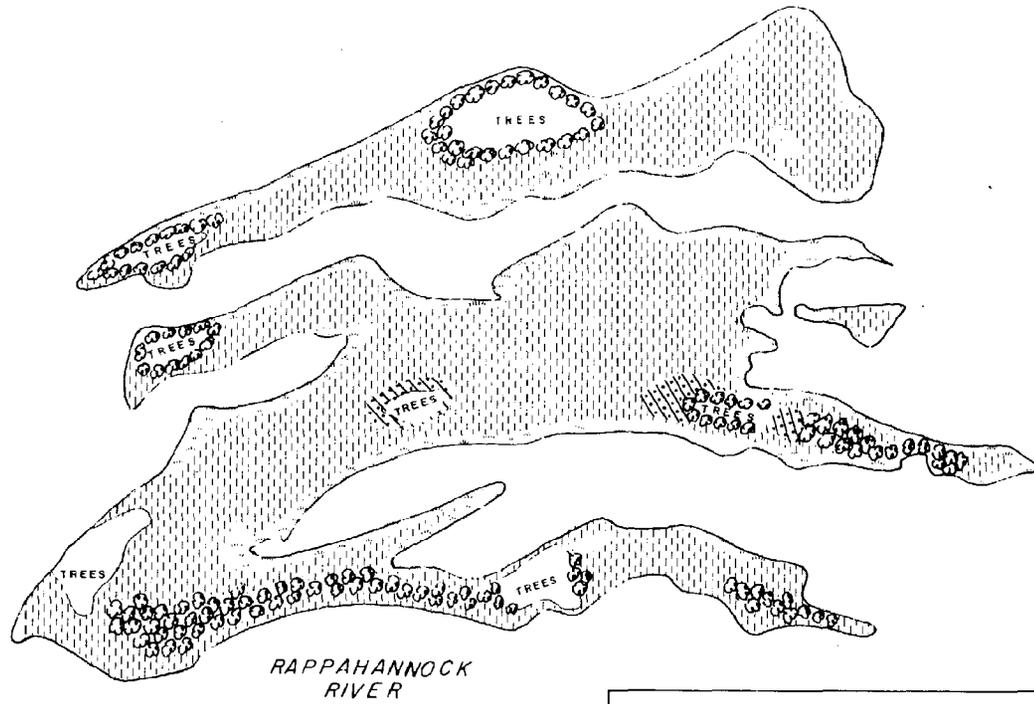


NO. 31



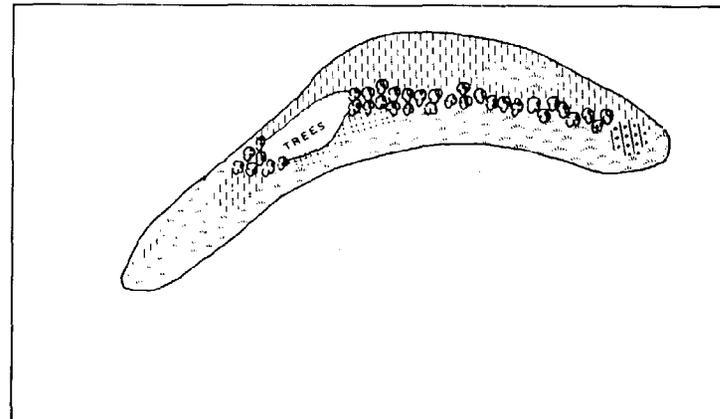
NO. 33

RAPPAHANNOCK
RIVER



-  SALTMEADOW HAY - SALTGRASS
-  SALTMARSH CORDGRASS
-  BLACK NEEDLERUSH
-  SALT BUSH
-  SALTMARSH BULRUSH

NO. 34



Section II

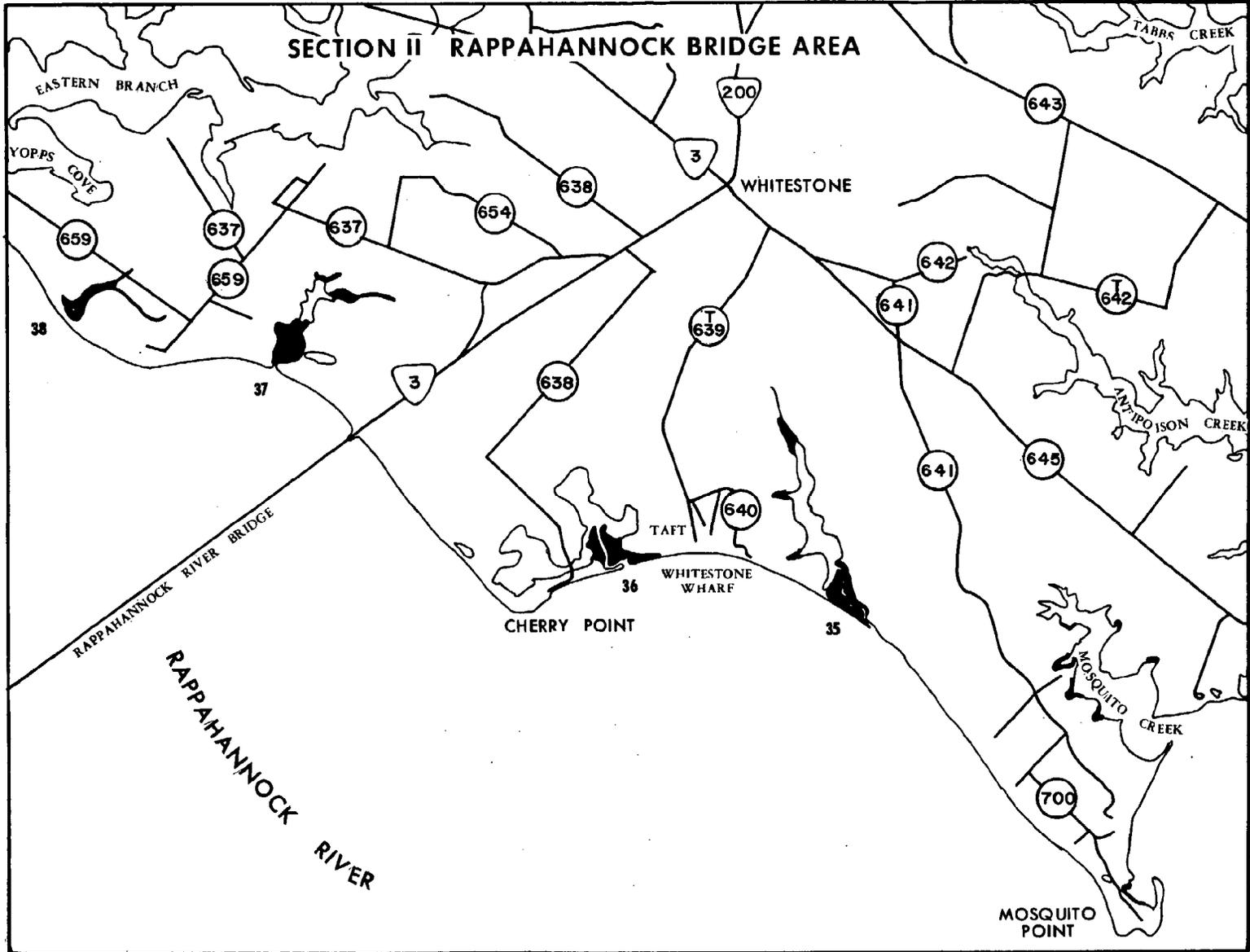
Rappahannock Bridge Area

This section has the fewest number of marshes and total acreage (35) than any of the other sections.

Marshes along the Rappahannock River in this area typically have a natural sand berm. The berms are characteristically vegetated with a narrow band of saltbushes along with small pines in some cases. The channels are usually narrow and shallow with sand bottoms. Farther up river, some of the marshes of this type are entirely closed off with a solid berm and no channel. Noticable sand accretion and shoal water usually accompany this type of situation.

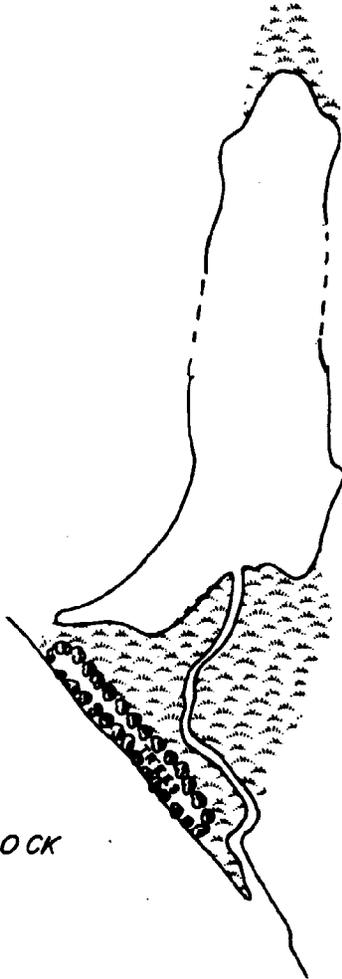
The marshes behind the sand berm are typically low, with saltmarsh cordgrass as the dominant species.

Although these marshes are in a natural state at the present time, they may be encroached by development in the future, considering their close proximity to the village of White Stone and the Rappahannock River Bridge.



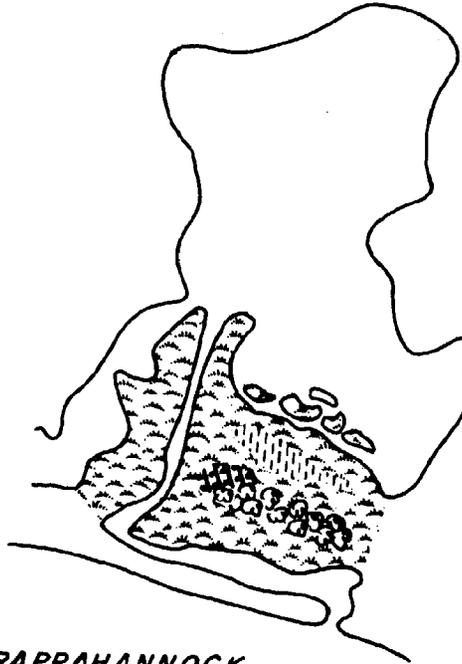
RAPPAHANNOCK
RIVER

NO. 35



RAPPAHANNOCK
RIVER

NO. 36



-  SALTMARSH CORDGRASS
-  BLACK NEEDLERUSH
-  SALTMEADOW HAY - SALTGRASS
-  SALTBUSH

Section II. Rappahannock Bridge Area

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres											
35	Near Taft	8	95	7.6									a 5	.4	3,000	375	Sand berm Sb, b, c
36	Near Cherry Point	7	65	4.5	15	1	5	.3	15	1					4,000	571	Sand berm b, c, g
37	Sanders Cove	14	60	8.4	35	4.9			5	.7					2,600	185	
38	Near Sanders Cove	6	80	4.8	15	.9			5	.3					1,200	200	Sand berm Sc, g
	Total Section II	35.0		25.3		6.8		.3		2				.4			

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

- | | | | |
|--------------------------|---------------------|---------------------------|------------------|
| Sa = Saltmarsh Cordgrass | c = Saltmarsh Aster | j = Pickerel Weed | p = Wild Rice |
| Jr = Black Needlerush | d = Cattail | k = Reed Grass | q = Sea Lavender |
| Md = Saltgrass Meadow | e = Marsh Hibiscus | l = Olney Threesquare | r = Marsh Pink |
| Sb = Saltbushes | f = Water Hemp | m = Marsh Mallow | |
| Sc = Big Cordgrass | g = Switch Grass | n = Saltmarsh Loosestrife | |
| a = Saltmarsh Bulrush | h = Foxtail Grass | o = Smartweed | |
| b = Saltmarsh Fleebane | i = Arrow Arum | | |

Section III

Carter Creek

Despite the rather extensive shoreline of Carter Creek, there are very few marshes of more than 1/4 acre in this area. We have delineated 20 marshes in this section totaling 38.25 acres. These marshes (Nos. 39 through 59) range in size from 1/4 acre to 5 acres.

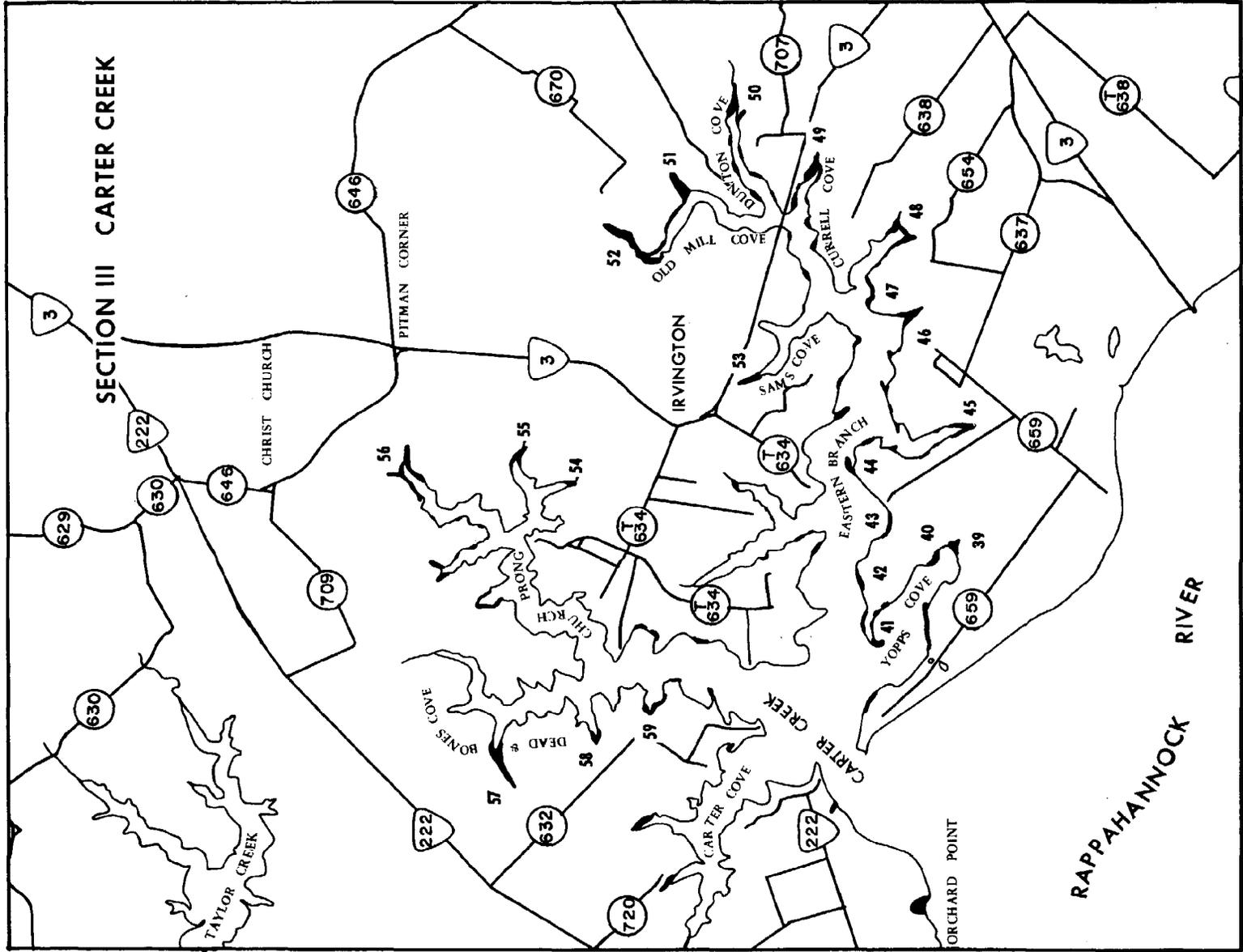
Because of the high degree of development and human activity in this system, effort should be made toward preservation of these surviving wetlands.

Wildlife such as herons, rails, muskrats and raccoons were observed in these small marshes even though they were within close proximity of dwellings, commercial establishments and resort areas.

The most dominant plant found in these marshes is saltmarsh cordgrass. Nearly 50 percent of the marshes in Carter Creek are dominated by this grass.

Water hemp (Amaranthus cannabina), a plant whose seeds are very important as a waterfowl food, is a predominant species in four marshes (50 through 53). This shrub-like herb may produce as much as a quart of seeds per plant.

Within the system, there are a number of small fringing marshes, ranging in size from approximately 200 to 10,000 square feet. Wetlands of these dimensions are delineated on the section map but are not numbered or characterized in this report.

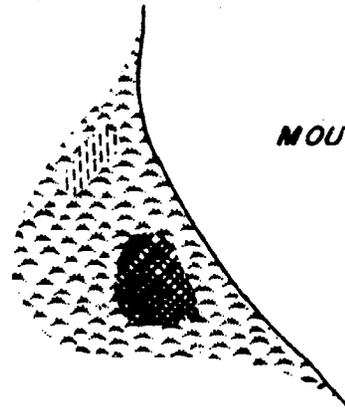


Section III. Carter Creek

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres											
39	Yopps Cove	2	30	.6	30	.6					40	.8			200	100	
40	Yopps Cove	1	20	.2	70	.7			10	.1					250	250	
41	Yopps Cove	2	45	.9	45	.9			10	.2					300	150	Several small patches Fringing marshes
42	Eastern Branch	.5	30	.1	50	.2			20	.1					300	600	
43	Eastern Branch	.5			30	.1	30	.1	20	.1			d 20	.1	200	400	e
44	Eastern Branch	.5	20	.1	70	.3	5		5						400	800	
45	Eastern Branch	1	70	.7	30	.3									100	100	c
46	Eastern Branch	3	80	2.4	10	.3			10	.3					600	200	
47	Eastern Branch	1	20	.2	50	.5	20	.2	10	.1					400	400	
48	Eastern Branch	2	70	1.4					30	.6					1,200	600	Much dead <u>Iva</u> c
49	Currell Cove	2.5	30	.7	40	1	30	.7							1,200	480	g
50	Dunton Cove	5	30	1.5			30	1.5					b, c, f 40	2.0	1,600	320	b, c

*Water Interface (ft.)** Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass	c = Saltmarsh Aster	j = Pickerel Weed	p = Wild Rice
Jr = Black Needlerush	d = Cattail	k = Reed Grass	q = Sea Lavender
Md = Saltgrass Meadow	e = Marsh Hibiscus	l = Olney Threesquare	r = Marsh Pink
Sb = Saltbushes	f = Water Hemp	m = Marsh Mallow	
Sc = Big Cordgrass	g = Switch Grass	n = Saltmarsh Loosestrife	
a = Saltmarsh Bulrush	h = Foxtail Grass	o = Smartweed	
b = Saltmarsh Fleabane	i = Arrow Arum		



MOUTH OF DEAD AND BONES PRONG

-  SALTMARSH CORDGRASS
-  BLACK NEEDLERUSH
-  SALTMARSH BULRUSH

NO. 58

Section III. Carter Creek

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres			
51	Old Mill Cove	2.5	50	1.2								b,c,f 50	1.2	800	320	b,c	
52	Old Mill Cove	5	20	1.0								d,f 80	4	2,000	400	b	
53	Sam's Cove	1	50	.5								f 50	.5	800	800	c	
54	Church Prong	?	-----	-----	-----	-----	dredged	-----	-----	-----	-----					Dredged spoil on marsh	
55	Church Prong	2	80	1.6								f 20	.4	1,100	550	m	
56	Church Prong	3	85	2.5								d,f 15	.4	2,000	666		
57	Dead and Bones Cove	2	85	1.7						10	.2	a,d 5	.1	200	100		
58	Mouth of Dead and Bones Prong	1	60	.6						10	.1	a,e 30	.3	100	100	g	
59	Carter Creek	.75	20	.1				70	.5			a 10		100	133		
	Total Section III	38.25		18.0		4.85		2.5		2.0		1.1		9.0			

*Water Interface (ft.) **Interface/Ares Ratio (feet/acre)

- | | | | |
|--------------------------|---------------------|---------------------------|------------------|
| Sa = Saltmarsh Cordgrass | c = Saltmarsh Aster | j = Pickerel Weed | p = Wild Rice |
| Jr = Black Needlerush | d = Cattail | k = Reed Grass | q = Sea Lavender |
| Md = Saltgrass Meadow | e = Marsh Hibiscus | l = Olney Threesquare | r = Marsh Pink |
| Sb = Saltbushes | f = Water Hemp | n = Saltmarsh Loosestrife | |
| Sc = Big Cordgrass | g = Switch Grass | o = Smartweed | |
| a = Saltmarsh Bulrush | h = Foxtail Grass | | |
| b = Saltmarsh Fleabane | i = Arrow Arum | | |

Section IV

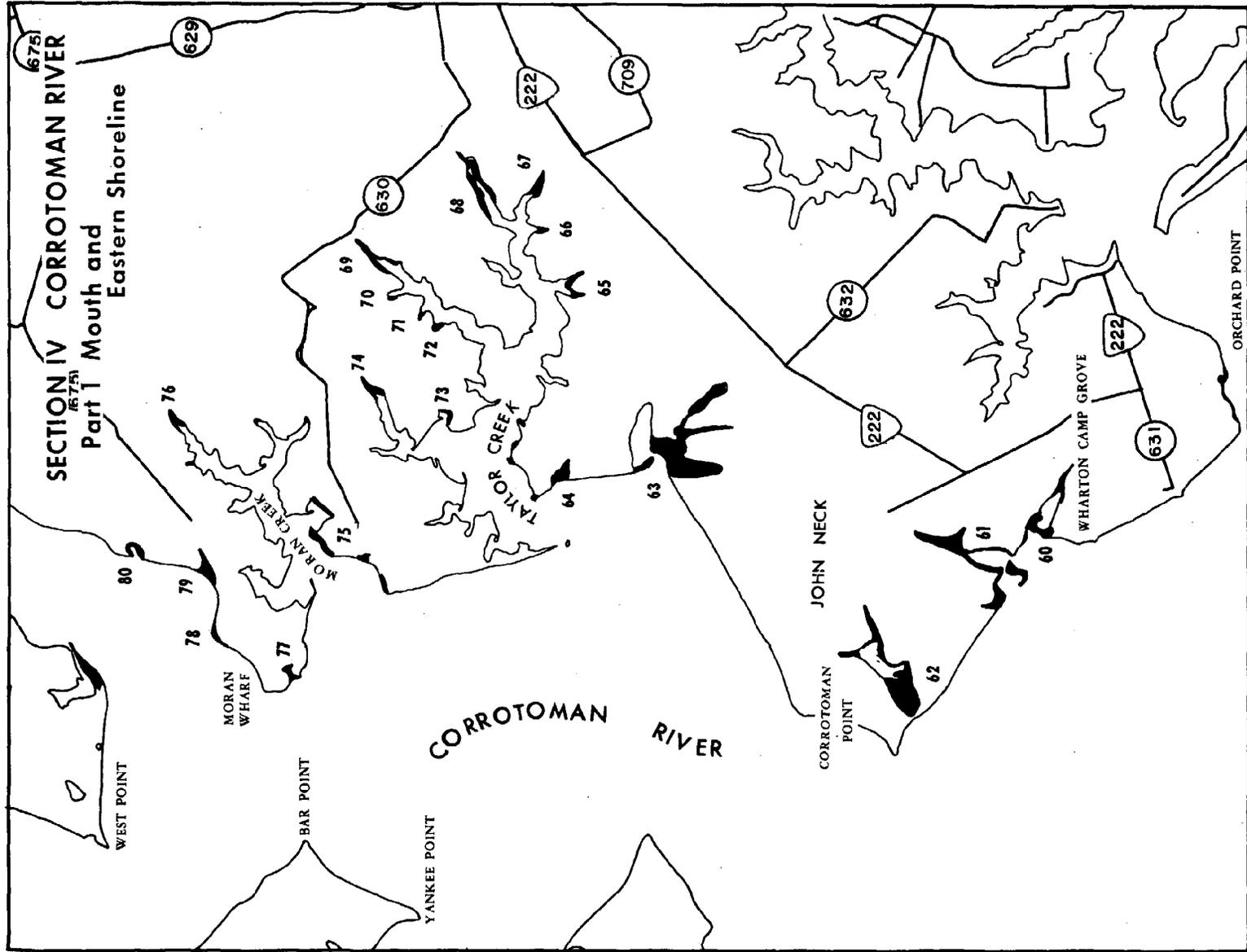
Corrotoman River

The Corrotoman River is the largest waterway system (other than the Rappahannock R.) in Lancaster County. Within the system are 103 marshes ranging in size from 1/4 acre to 145 acres and totaling 475.8 acres.

The most extensive of these marshes is the Belwood-Lancaster marsh complex. The dominant vegetation here is big cordgrass (Spartina cynosuroides), an indication of reduced salinity levels. Shallow water prevented a complete survey of the marsh. However, species such as arrow arum (Peltandra virginica), pickerel weed (Pontederia cordata) and other such species found sparingly near the mouth are indicators that the upper reaches of the wetland system is most likely a freshwater marsh.

Various developmental activities were observed in or near various marshes in the area. Survey markers were noted in marshes 71, 72, 81 and 90. Dredging activities and signs of upland development were observed in marshes 73, 74, 80, 82, 83, 93, 94, 98, 135 and 139. A number of examples of inadequate bulkheading were seen along the shoreline. Materials used in these cases included slabs of concrete, bricks, old tires, brush and tree trunks, concrete culverts, poorly constructed timber and refuse. Most of these structures were utilized to protect eroding banks.

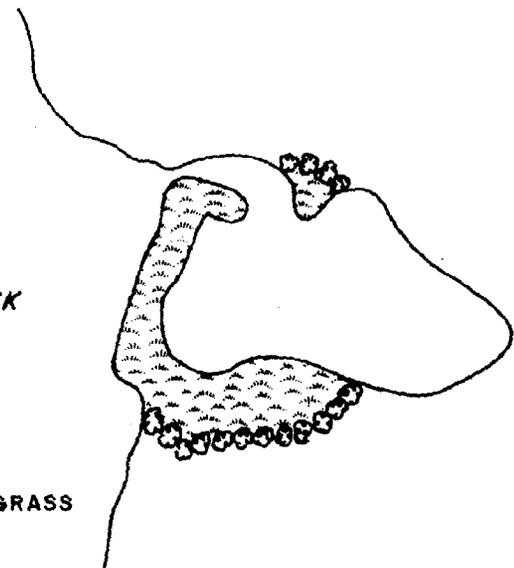
Other marshes of significant size are the Brown's Creek marshes (94 and 95) with a combined total of 16 acres, Little Branch marsh (133) 45 acres, and the black needlerush marshes of Whitehorse Creek and Towles Point Area (158 through 163) which total 70 acres.



RAPPAHANNOCK
RIVER



SALTMARSH CORDGRASS



NO. 60

Section IV. Corrotoman River. Part 1. Mouth and Eastern Shoreline

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres			
60	Wharton Grove Camp	1	90	.9					10	.1					1,200	1,200	c
61	Wharton Grove Camp	1	90	.9					10	.1					1,800	1,800	Island all Sa Fringing marsh
62	Corrotoman Pt.	5	40	2	50	2.5			10	.5					2,200	440	
63	Corrotoman R.	7	40	2.8	50	3.5			10	.7					2,400	343	Shallow water sand berm
64	Near Mouth Taylor Cr.	2	40	.8	40	.8			20	.4					200	100	Sand berm, shallow water
65	Taylor Cr.	1					30	.3			70	.7			400	400	e
66	Upper Taylor Cr.	.25	80	.2					20						50	200	
67	Upper Taylor Cr.	2	20	.4	70	1.4					10	.2			800	400	
68	Upper Taylor Cr.	4	20	.8			70	2.8	10	.4					2,400	600	
69	Upper Taylor Cr.	2.5	20	.5	60	1.5	20	.5							1,200	480	
70	Upper Taylor Cr.	.25	60	.1			20						d 20		50	200	
71	Taylor Cr.	.25	100	.2											50	200	Small marshes - survey markers
72	Taylor Cr.	.25	100	.2											75	300	Small marshes - survey markers
73	Taylor Cr.	.25			60	.1			40	.1					100	400	Indications of development

*Water Interface (ft.)**Interface/Area Ratio
(feet/acre)

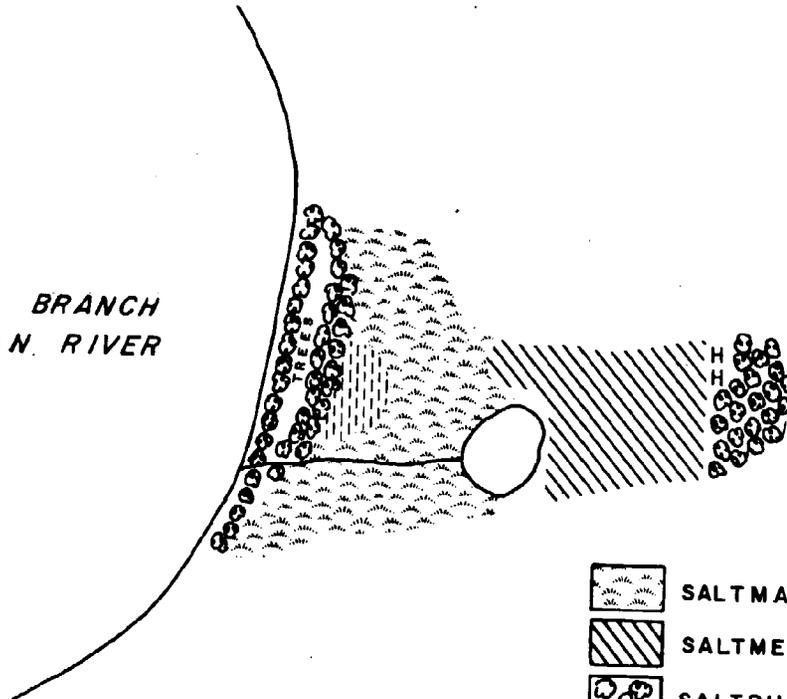
So = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane

c = Saltmarsh Aster
d = Cattle
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum

j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed

p = Wild Rice
q = Sea Lavender
r = Marsh Pink

*EASTERN BRANCH
CORROTOMAN RIVER*



NO. 79

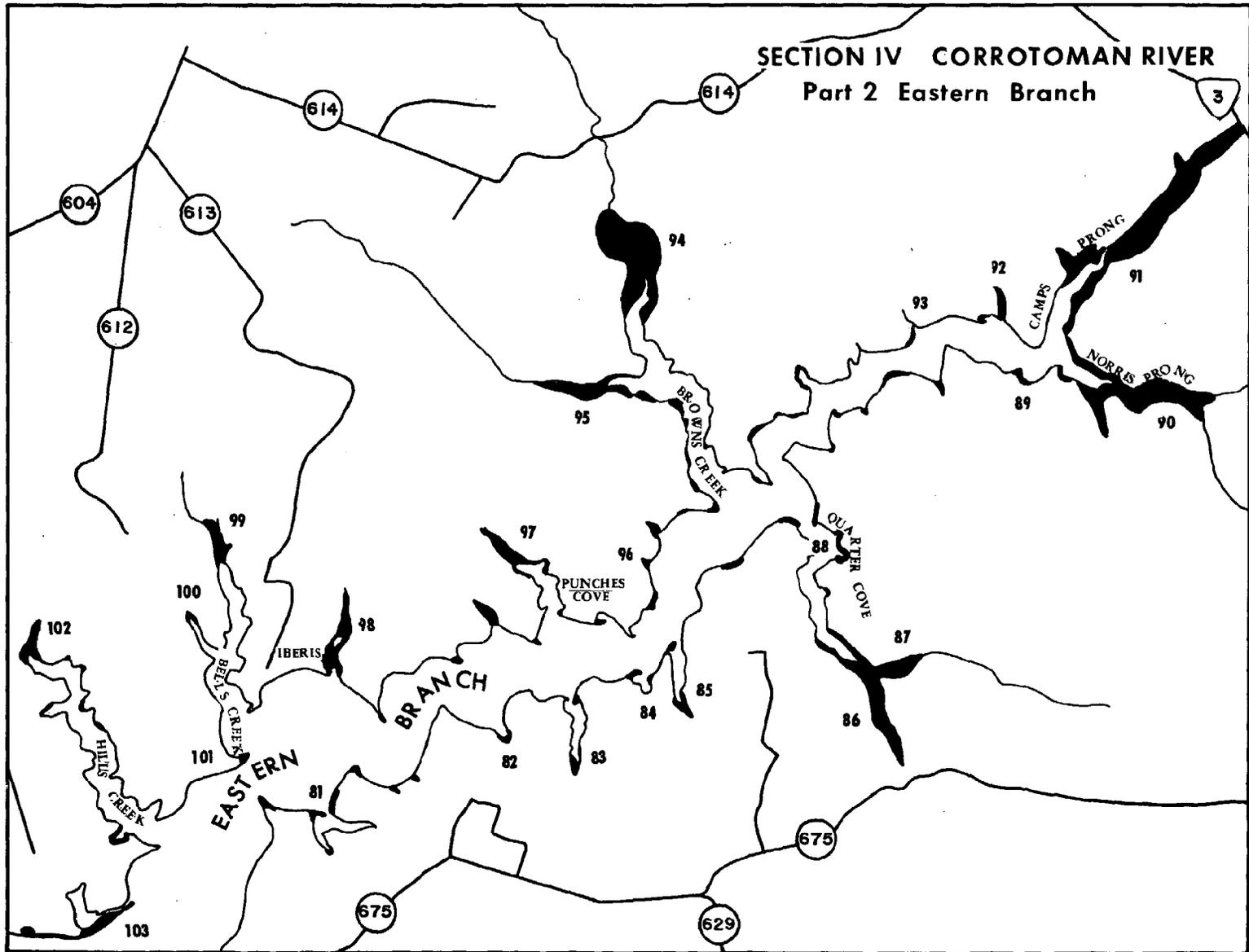
-  SALTMARSH CORDGRASS
-  SALTMEADOW HAY
-  SALT BUSH
-  MARSH HIBISCUS

Section IV. Corrotomen River. Part 1. Mouth and Eastern Shoreline

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres											
74	Taylor Cr.	.5	40	.2	10		40	.2	10						200	400	Indications of development
75	Moran Cr.	3	95	2.8					5	.1					800	266	
76	Upper Moran Cr.	3.5	90	3.1			5				5	.2			1,200	352	Shallow water, long and narrow
77	Moran Wharf	2	80	1.6	10	.2			10	.2					200	100	Shallow water
78	Eastern Br. Corrotomen R.	.5	10						40	.2	40	.2	g 10		600	1,200	
79	Eastern Br. Corrotomen R.	2	40	.8	10	.2	35	.7	10	.2			5	.1	700	350	
80	Eastern Br. Corrotomen R.	1	10	.1	80	.8			10	.1					500	500	Dredging
	Sub-total Section IV Part 1	39.35		18.4		10.9		4.5		3.1		1.3		.1			

*Water Interface (ft.)** Interface/Acre Ratio (feet/acre)

- | | | | |
|--------------------------|---------------------|---------------------------|------------------|
| Sa = Saltmarsh Cordgrass | c = Saltmarsh Aster | j = Pickerel Weed | p = Wild Rice |
| Jr = Black Needlerush | d = Cattail | k = Reed Grass | q = Sea Lavender |
| Md = Saltgrass Meadow | e = Marsh Hibiscus | l = Olney Threesquare | r = Marsh Pink |
| Sb = Saltbushes | f = Water Hemp | m = Marsh Mallow | |
| Sc = Big Cordgrass | g = Switch Grass | n = Saltmarsh Loosestrife | |
| a = Saltmarsh Bulrush | h = Foxtail Grass | o = Smartweed | |
| b = Saltmarsh Fleabane | i = Arrow Arum | | |



Section IV. Corrotoman River. Part 2. Eastern Branch.

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres											
81	Eastern Br. Corrotoman R.	1.5	10	.1	70	1			10	.1	10	.1			600	400	Survey marker
82	Eastern Br. Corrotoman R.	.5	10		80	.4					10				200	400	Dredged spoil on marsh
83	Eastern Br. Corrotoman R.	.75	40	.3							20	.1	d	.3	700	933	Dredged spoil on marsh
84	Eastern Br. Corrotoman R.	.5	20	.1	60	.3			10		10				600	1,200	Fringing clumps
85	Eastern Br. Corrotoman R.	1	10	.1	80	.8			10	.1					1,200	1,200	d,e,f
86	Quarter Cove	15	90	13.5							5	.7	a	.7	5,000	333	d,i,m
87	Quarter Cove	3	80	2.4							10	.3	d,f	.3	3,000	1,000	c
88	Quarter Cove	.5	60	.3	10						20	.1	d		350	700	
89	Eastern Br.	.5	70	.3							20	.1	d		200	400	n
90	Norris Prong Marsh	17	20	3.4							50	8.5	d,f	5.1	8,000	470	Survey markers
91	Camps Prong Marsh	18	10	1.8							30	5.4	d	10.8	10,000	555	b,e,f,i,j,m
92	Eastern Br.	2	20	.4	70	1.4					10	.2			1,400	700	
93	Eastern Br.	?															

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

- | | | | |
|--------------------------|---------------------|---------------------------|------------------|
| Sa = Saltmarsh Cordgrass | c = Saltmarsh Aster | j = Pickerel Weed | p = Wild Rice |
| Jr = Black Needlerush | d = Cattail | k = Reed Grass | q = Sea Lavender |
| Md = Saltgrass Meadow | e = Marsh Hibiscus | l = Olney Threesquare | r = Marsh Pink |
| Sb = Saltbushes | f = Water Hemp | m = Marsh Mallow | |
| Sc = Big Cordgrass | g = Switch Grass | n = Saltmarsh Loosestrife | |
| a = Saltmarsh Bulrush | h = Foxtail Grass | o = Smartweed | |
| b = Saltmarsh Fleabane | i = Arrow Arum | | |

*EASTERN BRANCH
CORROTOMAN RIVER*

-  SALTMARSH CORDGRASS
-  BLACK NEEDLERUSH
-  CATTAILS
-  BIG CORDGRASS

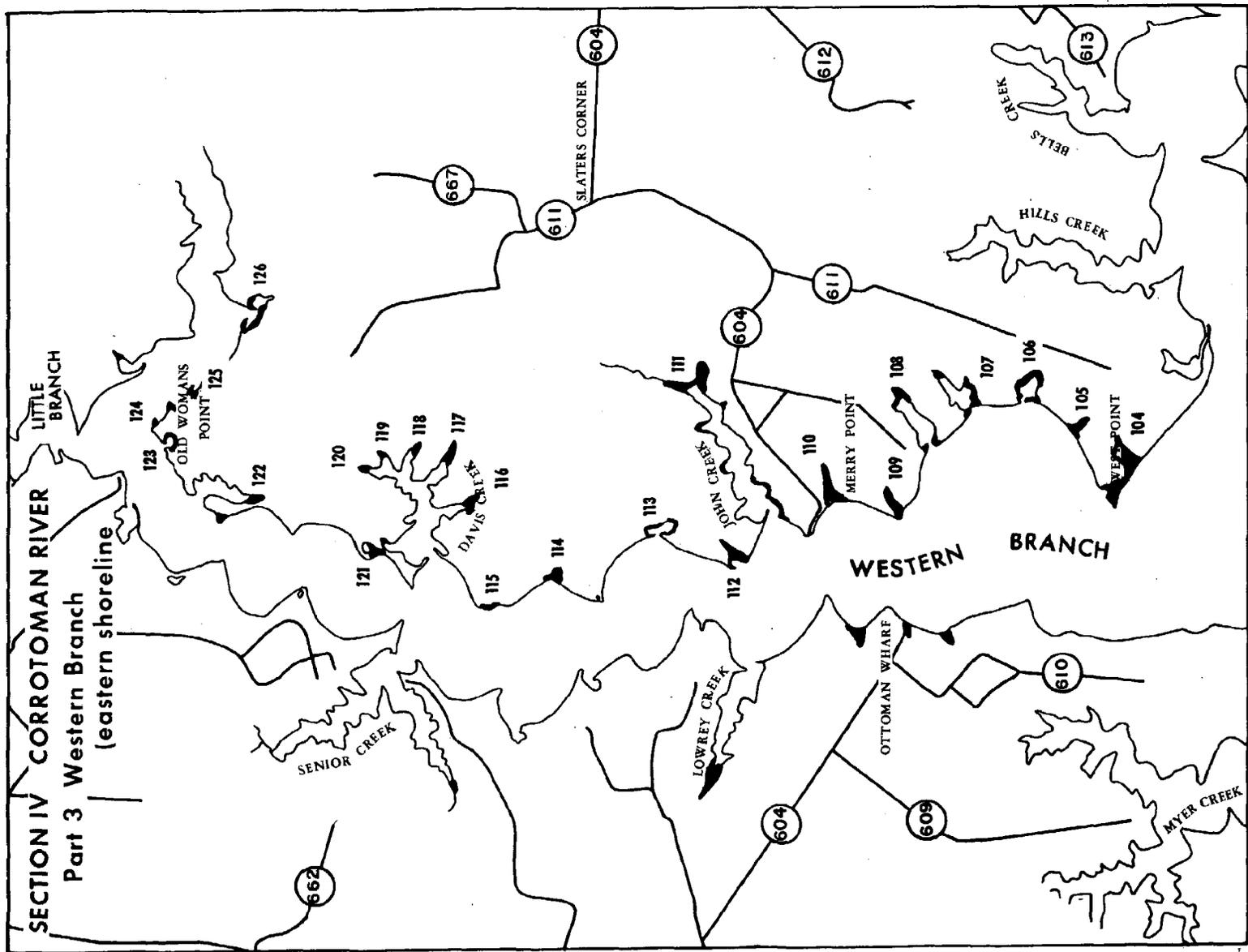
NO. 98

Section IV. Part 2. Eastern Branch

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations	
			%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres				
94	Brown's Cr.	12	70	8.4							10	1.2	b,c,f 20	2.4	4,200	350	Fresh dredging b,c,j,o	
95	Brown's Cr. Left Prong	4	60	2.4							20	.8	d,f 20	.8	3,200	800	c,d,o	
96	Eastern Br.	.75	40	.3	20	.1			15'	.1	20	.1	e 5		200	267	m	
97	Punches Cove	2	70	1.1									d 30	.6	2,000	1,000		
98	Eastern Br.	6	40	2.4	40	2.4			10	.6	10	.6			3,600	600	Road construction near end - Md,c,f,o	
99	Upper Bell's Cr.	4	70	2.8	10	.4			10	.4			d 10	.4	1,800	450	f	
100	Upper Bell's Cr.	.5			80	.4					20	.1			300	600		
101	Mouth Bell's Cr.	.5			90	.4			5		5				400	800	c	
102	Upper Hills Cr.	3	90	2.7							5	.1	a 5	.1	400	133	c,d	
103	Hodgson	3.5	10	.3	75	2.6			10	.3	5	.2			2,000	606	Sand berm g,h	
	Sub-total Section IV Part 2	96.5		43.1		10.20						1.6		18.				

*Water Interface (ft.)** Interface/Area Ratio
(feet/acre)

Sa = Saltmarsh Cordgrass	c = Saltmarsh Aster	j = Pickerel Weed	p = Wild Rice
Jr = Black Needlerush	d = Cattail	k = Reed Grass	q = Sea Lavender
Md = Saltgrass Meadow	e = Marsh Hibiscus	l = Olney Threesquare	r = Marsh Pink
Sb = Saltbushes	f = Water Hemp	m = Marsh Mallow	
Sc = Big Cordgrass	g = Switch Grass	n = Saltmarsh Loosestrife	
a = Saltmarsh Bulrush	h = Foxtail Grass	o = Smartweed	
b = Saltmarsh Fleabane	i = Arrow Arum		



WESTERN BRANCH
CORROTOMAN RIVER

-  SALTMARSH CORDGRASS
-  BLACK NEEDLERUSH
-  CATTAILS

NQ 113

Section IV. Part 3. Western Branch (Eastern Shoreline)

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres											
104	West Pt. W. Branch	4	20	.8	40	1.6	10	.4	30	1.2					2,600	650	Disturbed; Fringing and interior marsh h,r
105	W. Branch Corrotoman R.	.5	80	.4					10		10				200	400	Jr
106	W. Branch Corrotoman R.	4	10	.4	80	3.2			10	.4					1,200	300	Sand berm in front with Sa and Sb
107	W. Branch Corrotoman R.	.25	40	.1					60	.1					600	2,400	Sand berm
108	W. Branch Corrotoman R.	.25	70	.2					30						200	800	
109	W. Branch near Merry Pt.	2	20	.4			70	1.1	10	.2					200	100	Sand berm
110	W. Branch near Merry Pt.	1.5	40	.6	10	.1			20	.3	20	.3	f 10	.1	200	133	
111	Upper John Creek	6	80	4.8	10	.6							d 10	.6	2,400	600	e,f,p
112	W. Branch Corrotoman R.	2.5	20	.5	70	1.7					10	.2			500	200	Sand berm
113	W. Branch Corrotoman R.	.5	15		75	.4							d 10		600	1,200	
114	W. Branch Corrotoman R.	.25	50	.1	50	.1									200	800	
115	W. Branch Corrotoman R.	.25	50	.1	50	.1									400	1,600	
116	Davis Creek	.25	20		70	.2							d 10		200	800	
117	Davis Creek	1.5	40	.6	10	.1					10	.1	f 40	.6	1,000	666	

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
 Jr = Black Needlerush
 Md = Saltgrass Meadow
 Sb = Saltbushes
 Sc = Big Cordgrass
 a = Saltmarsh Bulrush
 b = Saltmarsh Fleabane
 c = Saltmarsh Aster
 d = Cattail
 e = Marsh Hibiscus
 f = Water Hemp
 g = Switch Grass
 h = Foxtail Grass
 i = Arrow Arum
 j = Pickerel Weed
 k = Reed Grass
 l = Olney Threesquare
 m = Marsh Mallow
 n = Saltmarsh Loosestrife
 o = Smartweed

p = Wild Rice
 q = Sea Lavender
 r = Marsh Pink

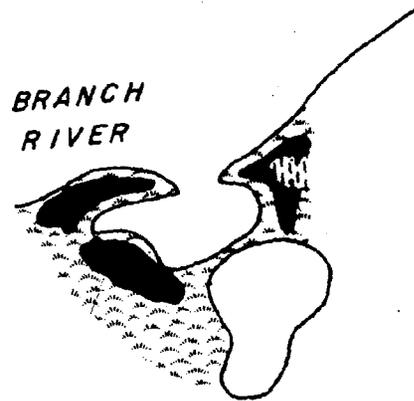
WESTERN BRANCH
CORROTOMAN RIVER



NO. 123

-  SALTMARSH CORDGRASS
-  BLACK NEEDLERUSH
-  BIG CORDGRASS
-  SALT BUSH

WESTERN BRANCH
CORROTOMAN RIVER



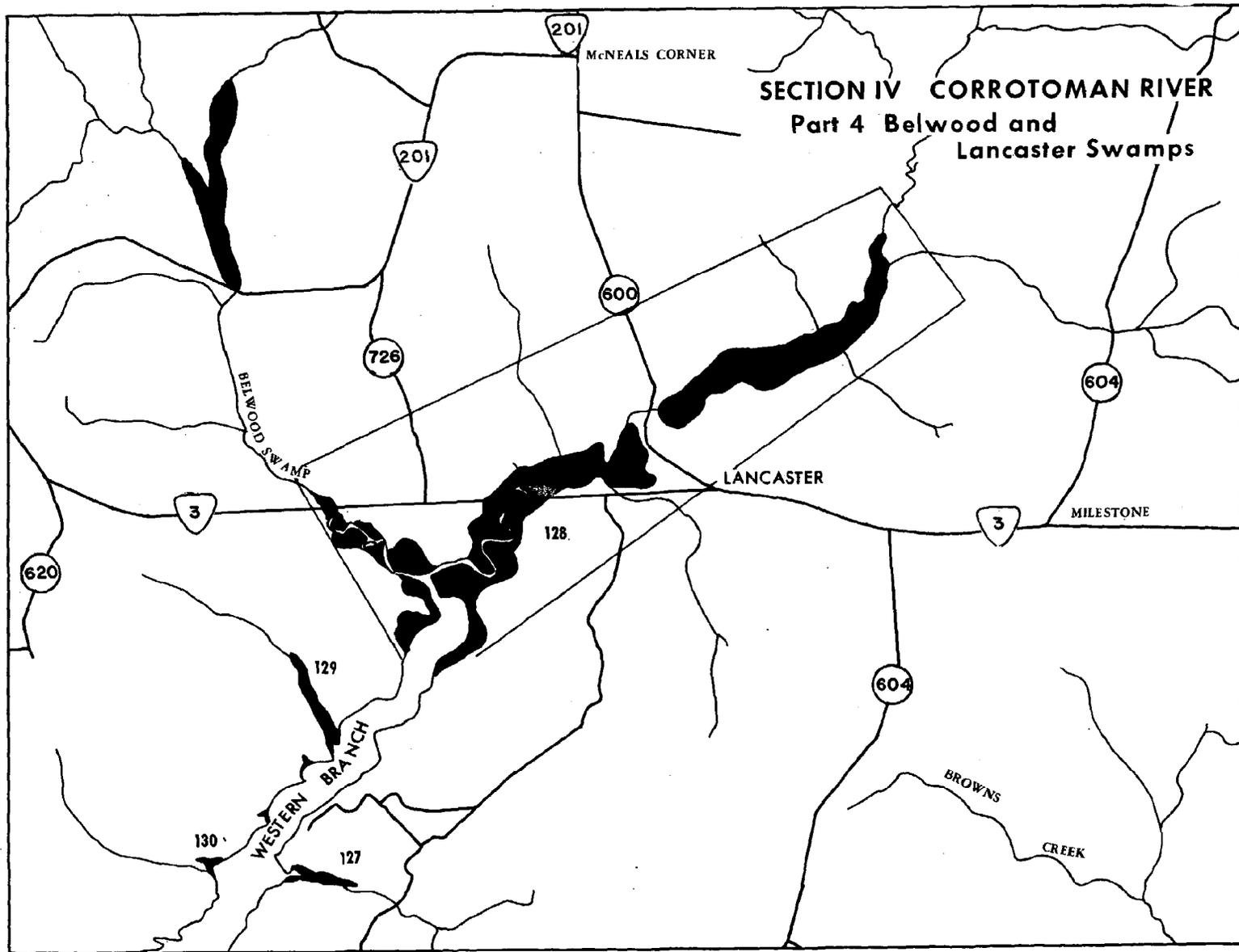
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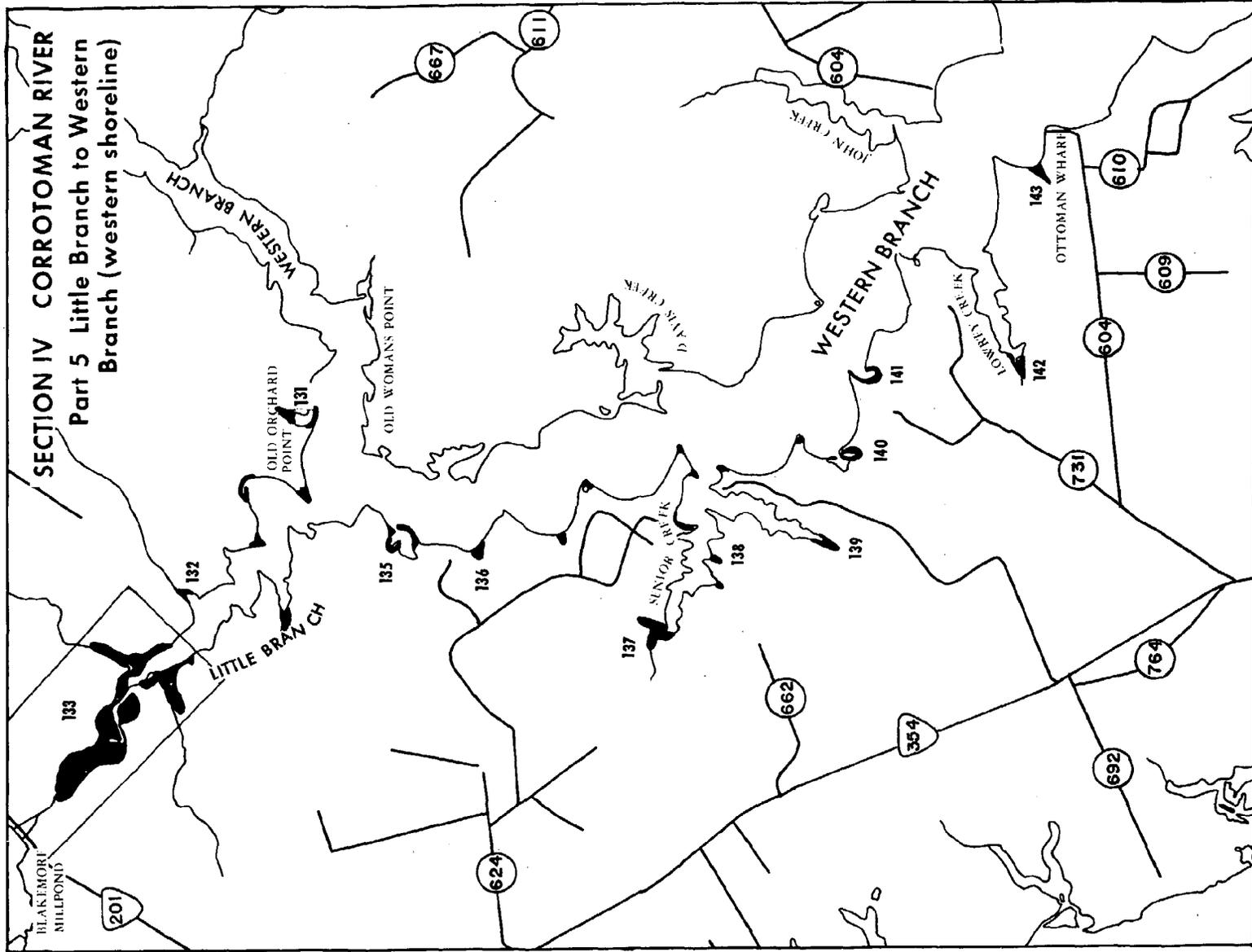
Section IV. Part 3. Western Branch (Eastern Shoreline)

#	Place Name	Acres	S _a		J _r		M _d		S _b		S _c		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres											
118	Davis Creek	.5	80	.4					20	.1					500	1,000	
119	Davis Creek	.25	90	.2									e 10		500	2,000	
120	Davis Creek	.25	60	.1	20		20								500	2,000	
121	W. Branch Corrotoman R.	1	60	.6	20	.2			10	.1	10	.1			400	400	
122	W. Branch Corrotoman R.	.25	80	.2							10		d 10		500	2,000	
123	W. Branch Corrotoman R.	.5	70	.3	10				10		10				200	400	Much dead <u>Iva</u>
124	W. Branch Corrotoman R.	.5	20	.1	40	.2			40	.2					300	600	
125	W. Branch Corrotoman R.	.5	40	.2					10		40	.2	d 10		150	300	
126	W. Branch Corrotoman R.	3	40	1.2	20	.6					40	1.2			1,200	400	
	Sub-total Section IV Part 3	30.5		12.3		9.2		1.5		2.6		2.1		1.3			

*Water Interface (ft.)** Interface/Area Ratio (feet/acre)

- | | | | |
|--------------------------------------|---------------------|---------------------------|------------------|
| S _a = Saltmarsh Cordgrass | c = Saltmarsh Aster | j = Pickerel Weed | p = Wild Rice |
| J _r = Black Needlerush | d = Cattail | k = Reed Grass | q = Sea Lavender |
| M _d = Saltgrass Meadow | e = Marsh Hibiscus | l = Olney Threesquare | r = Marsh Pink |
| S _b = Saltbushes | f = Water Hemp | m = Marsh Mallow | |
| S _c = Big Cordgrass | g = Switch Grass | n = Saltmarsh Loosestrife | |
| a = Saltmarsh Bulrush | h = Foxtail Grass | o = Smartweed | |
| b = Saltmarsh Fleabane | i = Arrow Arum | | |



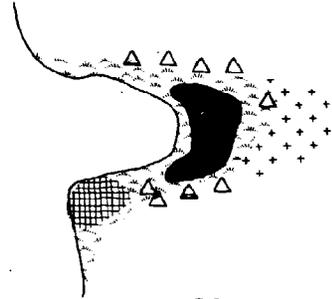




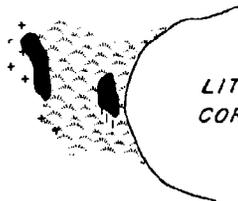
LITTLE BRANCH
CORROTOMAN RIVER

NO. 131

LITTLE BRANCH
CORROTOMAN RIVER

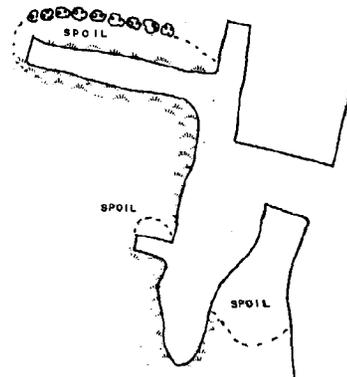


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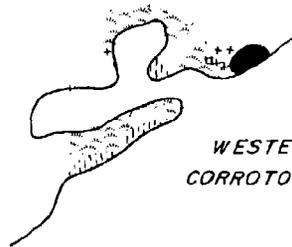


LITTLE BRANCH
CORROTOMAN RIVER

NO. 134



NO. 136



WESTERN BRANCH
CORROTOMAN RIVER

NO. 135

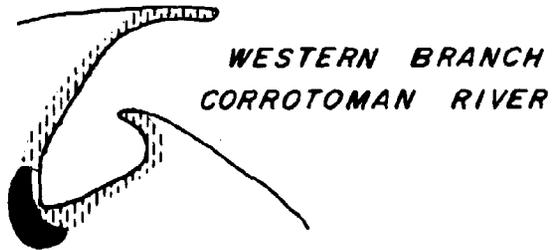
	SALTMARSH CORDGRASS
	BIG CORDGRASS
	SALTMARSH BULRUSH
	BLACK NEEDLERUSH
	SALTBUSH
	CATTAI LS
	WATER HEMP

Section IV. Corrotoman River. Part 5. Little Branch-Western Branch (Western Shoreline)

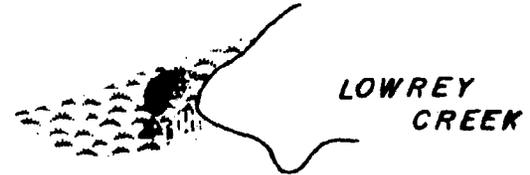
#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations	
			%	Acres	%	Acres												
131	Little Br. Corrotoman R.	1.5	50	.7					20	.3	30	.4			800	533	e	
132	Near Griffin Landing	2	20	.4							20	.4	a, d, f 60	1.2	1,000	500		
133	Upper Little Br.	4.5	10	4.5							70	31.5	d, i, j 20	9	11,000	244	Extensive marsh with fringe - i, j	
134	Upper Little Br.	3	75	2.2	5	.1					5	.1	d 15	.6	700	233		
135	Western Br. Corrotoman R.	2	65	1.3	10	.2					10	.2	a 5	d 10	.1	.2	1,400	700
136	Western Br. Corrotoman R.	2																Spoil; Dredged, bulkheaded - g

- | | | | |
|--------------------------|---------------------|---------------------------|------------------|
| Sa = Saltmarsh Cordgrass | c = Saltmarsh Aster | j = Pickerel Weed | p = Wild Rice |
| Jr = Black Needlerush | d = Cattail | k = Reed Grass | q = Sea Lavender |
| Md = Saltgrass Meadow | e = Marsh Hibiscus | l = Olney Threesquare | r = Marsh Pink |
| Sb = Saltbushes | f = Water Hemp | m = Marsh Mallow | |
| Sc = Big Cordgrass | g = Switch Grass | n = Saltmarsh Loosestrife | |
| a = Saltmarsh Bulrush | h = Foxtail Grass | o = Smartweed | |
| b = Saltmarsh Fleabane | i = Arrow Arum | | |

*Water Interface (ft.)** Interface/Area Ratio (feet/acre)

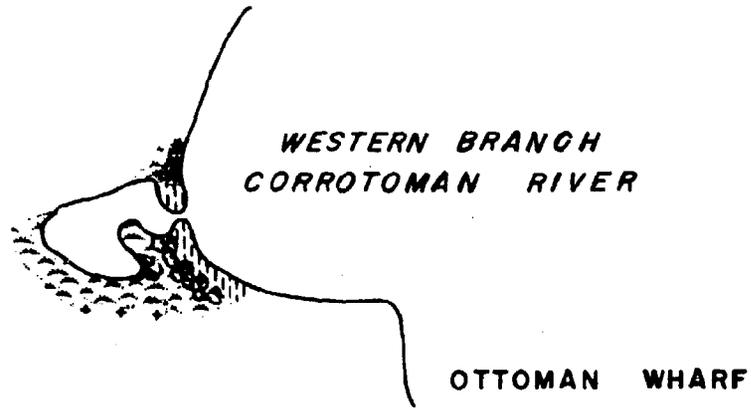


NO. 141



NO. 142

- | | |
|--|---------------------|
| | SALTMARSH CORDGRASS |
| | BLACK NEEDLERUSH |
| | BIG CORDGRASS |
| | SALTMADOW HAY |
| | SALTBUSH |
| | SALTMARSH BULRUSH |



NO. 143

Section IV. Corrotoman River. Part 5. Little Branch-Western Branch (Western Shoreline)

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other			WI*	I/AR**	Observations		
			%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%				Acres	
137	Senior Creek	3	90	2.7							10	.3			200	66	Shallow water			
138	Senior Creek	.25											k	d, l	80	20	.2	50	200	b
139	Senior Creek Left Arm	1.5	50	.7	30	.4							b, d		20	.3		200	133	Some dredging c
140	Western Br. Corrotoman R.	.25	20				40	.1			40	.1						200	800	Sand berm in front
141	Western Br. Corrotoman R.	.25	20		80	.2												600	2,400	
142	Lowrey Creek	1.25	70	.9	10	.1					10	.1	a		10	.1		1,000	800	f
143	Near Ottoman Wharf	1.5	30	.4	20	.3	20	.3	20	.3			b		10	.1		200	133	b
	Sub-total Section IV Part 5	61.5		13.8		1.3		.4		.6	13.8	33.1			11.8					

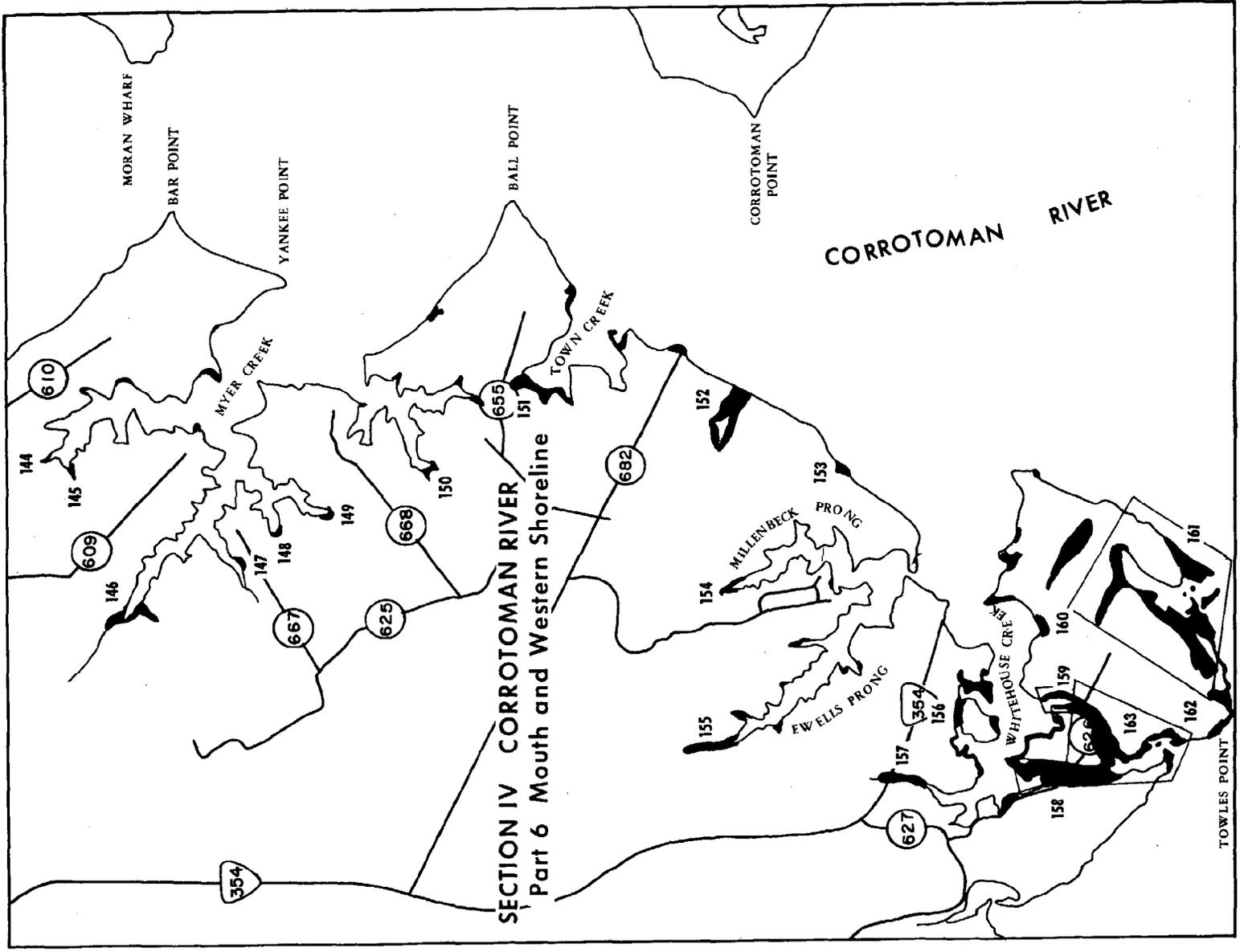
*Water Interface (ft.)** Interface/Area Ratio
(feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane

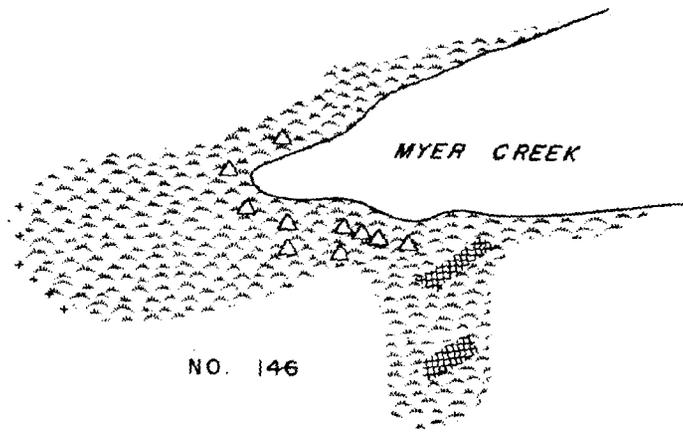
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum

j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed

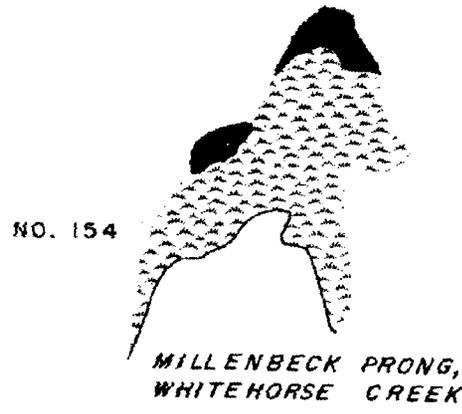
p = Wild Rice
q = Sea Lavender
r = Marsh Pink



SECTION IV CORROTOMAN RIVER
Part 6 Mouth and Western Shoreline



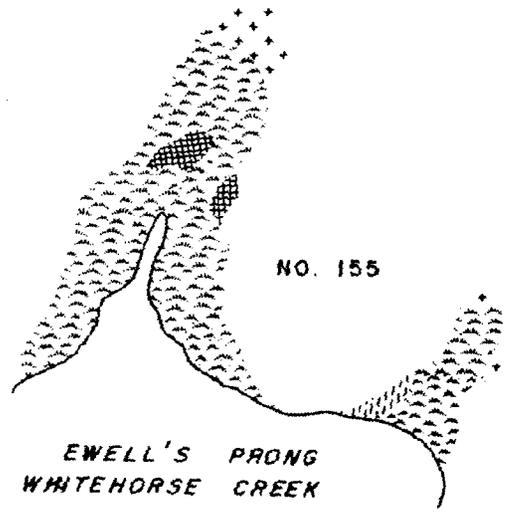
NO. 146



NO. 154

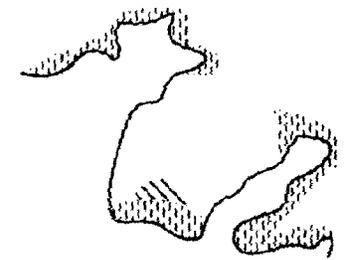
MILLENBECK PRONG,
WHITEHORSE CREEK

-  SALTMARSH CORDGRASS
-  BIG CORDGRASS
-  BLACK NEEDLERUSH
-  SALTMARSH BULRUSH
-  CATTAILS
-  WATER HEMP
-  SALTMEADOW HAY



NO. 155

EWELL'S PRONG
WHITEHORSE CREEK



WHITEHORSE CREEK

NO. 156

Section IV. Part 6. Mouth and Western Shoreline

#	Place Name	Acres	Ss		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres											
144	Myer Creek	.75	30	.2	40	.3	10		20	.1					100	133	
145	Myer Creek	.5	20	.1	50	.2			5				a, f 25	.1	50	100	
146	Myer Creek	3	70	2.1									a, d, f 30	.9	2,600	866	
147	Myer Creek	1	50	.5			10	.1	20	.2			f 20	.2	100	100	
148	Myer Creek	.5	60	.3					20	.1			f 20	.1	50	100	n
149	Myer Creek	1	50	.5									f 50	.5	50	50	c
150	Myer Creek	.5	60	.3			30	.1					e 10		300	600	c, e
151	Town Creek	.5	70	.3									b, c, e 30	.1	600	1,200	b, c
152	Corrotoman R.	5	80	.4					10	.5			d 10	.5	250	50	Sand berm
153	Corrotoman R.	1.5	40	.6	50	.7			10	.1					200	133	Sand berm
154	Millenbeck Prong Whitehorse Cr.	1.5	85	1.3									d 15	2	600	400	c
155	Ewells Prong Whitehorse Cr.	4	70	2.8	10	.4							a, d 20	.8	1,600	400	
156	Whitehorse Cr.	2	90	1.8			10	.2							2,000	1,000	
157	Upper Whitehorse Cr.	.75	60	.4	30	.2			10						800	1,066	

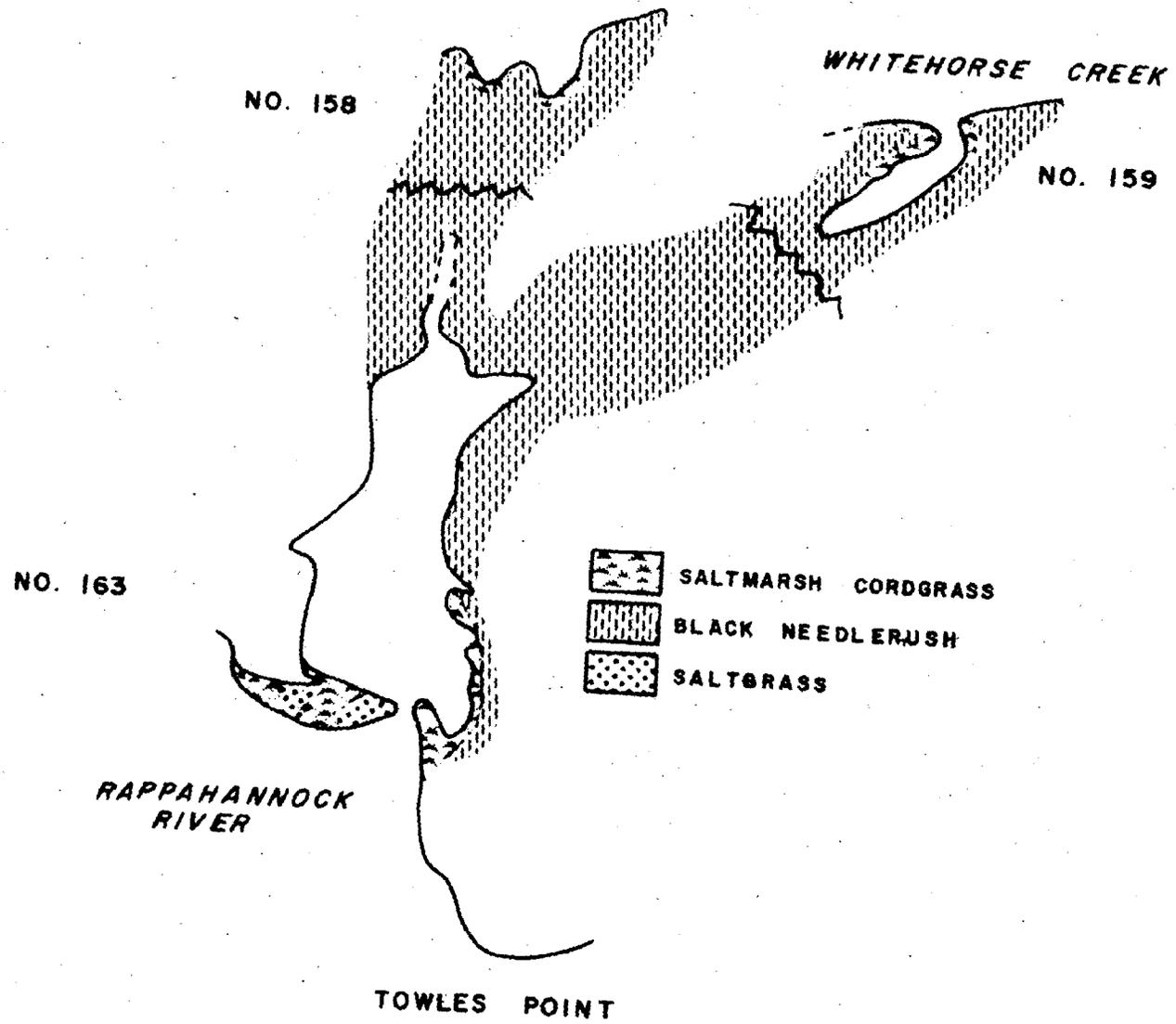
*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass
 Jr = Black Needlerush
 Md = Saltgrass Meadow
 Sb = Saltbushes
 Sc = Big Cordgrass
 a = Saltmarsh Bulrush
 b = Saltmarsh Fleabane

c = Saltmarsh Aster
 d = Cattail
 e = Marsh Hibiscus
 f = Water Hemp
 g = Switch Grass
 h = Foxtail Grass
 i = Arrow Arum

j = Pickerel Weed
 k = Reed Grass
 l = Olney Threesquare
 m = Marsh Mallow
 n = Saltmarsh Loosestrife
 o = Smartweed

p = Wild Rice
 q = Sea Lavender
 r = Marsh Pink



Section IV. Part 6. Mouth and Western Shoreline

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres											
158	Whitehorse Cr.	15	10	1.5	90	13.5									1,600	106	
159	Whitehorse Cr.	15	10	1.5	90	13.5									2,000	133	
160	Whitehorse Cr.	3	10	.3	80	2.4	10	.3							200	66	Fringing marsh
161	Towles Pt. Rapp. River	30	20	6	70	21.			10	3					8,000	266	Shallow water Sand berm
162	Towles Pt. Rapp. River	1	80	.8					20	.2					300	300	
163	Towles Pt.	6	60	3.6	20	1.2	20	1.2							2,000	33	
	Sub-total Section IV Part 6	92.5		28.9		53.4		1.9		4.2			3.4				
	Total Section IV	475.8		129.5		84.9		8.3		12.4		178.6	53.4				

*Water Interface (ft.)** Interface/Area Ratio (feet/acre)

- | | | | |
|--------------------------|---------------------|---------------------------|------------------|
| Sa = Saltmarsh Cordgrass | c = Saltmarsh Aster | j = Pickerel Weed | p = Wild Rice |
| Jr = Black Needlerush | d = Cattail | k = Reed Grass | q = Sea Lavender |
| Md = Saltgrass Meadow | e = Marsh Hibiscus | l = Olney Threesquare | r = Marsh Pink |
| Sb = Saltbushes | f = Water Hemp | m = Marsh Mallow | |
| Sc = Big Cordgrass | g = Switch Grass | n = Saltmarsh Loosestrife | |
| a = Saltmarsh Bulrush | h = Foxtail Grass | o = Smartweed | |
| b = Saltmarsh Fleabane | i = Arrow Arum | | |

Section V

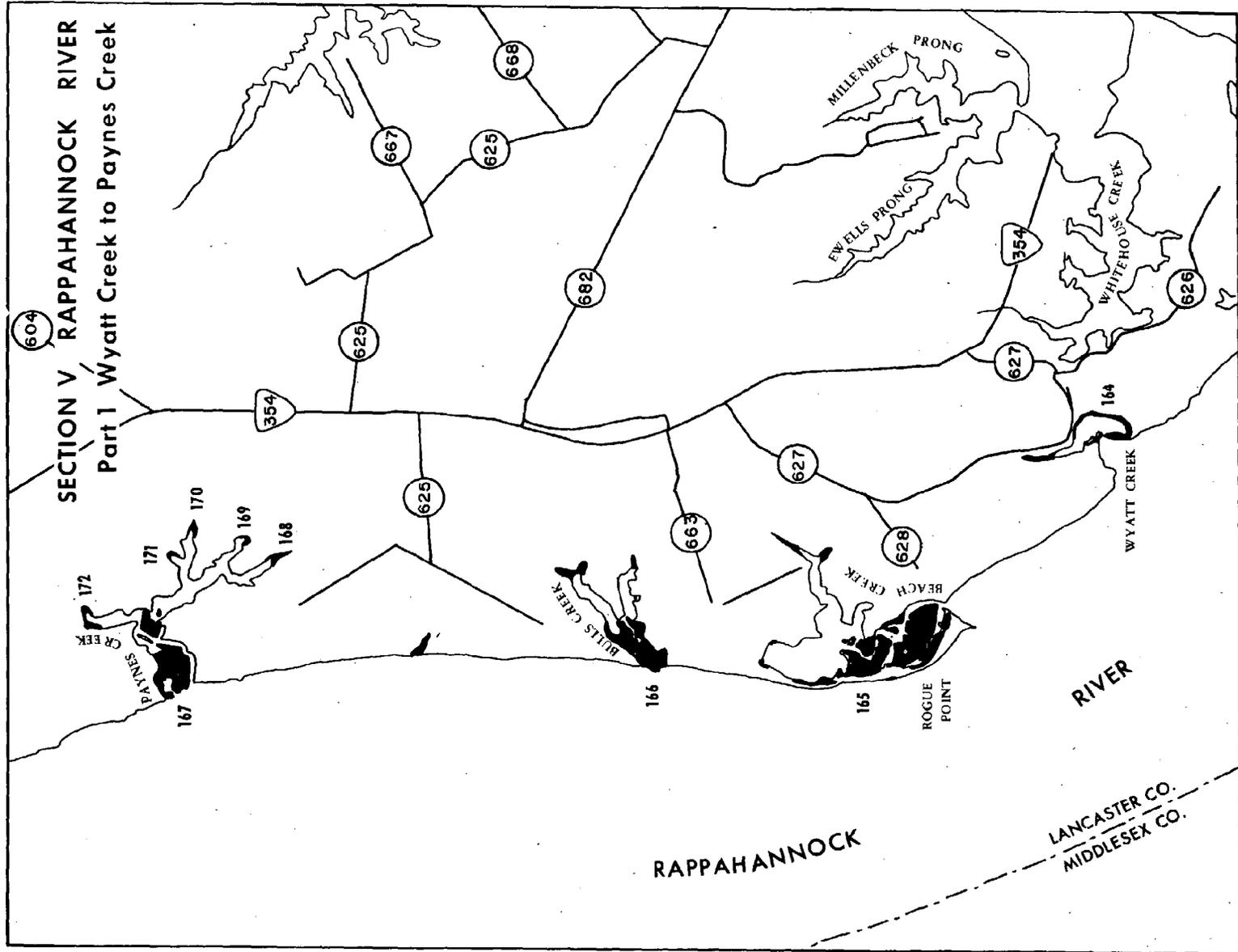
Rappahannock River

The marshes of this section total nearly 105 acres. The largest and perhaps the most diverse marsh, vegetatively, is the Rogue Point marsh with 28 acres. A wide range of marsh communities can be observed here. (1) the marsh edge zone, composed of mainly saltmarsh cordgrass, (2) pure stands of black needlerush, (3) small meadows of saltgrass (Distichlis spicata), and saltmeadow hay (Spartina patens), and (4) saltbush (Iva frutescens - Baccharis halimifolia) communities at higher elevations are easily delineated. Near the mouth of Beach Creek which drains this marsh, a spoil bank was observed, indicating periodic dredging of the channel. Presently, the creek mouth is very shallow, making entrance nearly impossible at low tide.

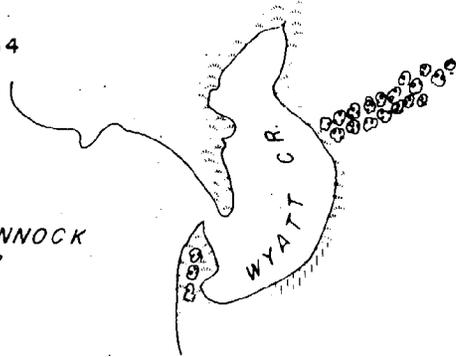
North of Rogue Point marsh is Paynes Creek with a wetland system totaling 23 acres. Although these marshes are not as diverse as Rogue Point they do have a high percentage of important species such as saltmarsh cordgrass and water hemp. This is a relatively undisturbed marsh with little human activity.

The marsh and creek system (173) near the mouth of Greenvale Creek was difficult to observe because of shoal water. The bottom appeared to be of sterile sand with little or no aquatic vegetation. This condition seems to be the result of severe erosion of a nearby spoil bank.

Cage Creek marsh (183) is a rather large marsh (14 acres) vegetated primarily by saltmarsh cordgrass and black needlerush. Shoal water prevented complete exploration into the interior of this marsh.



NO. 164
 RAPPAHANNOCK
 RIVER

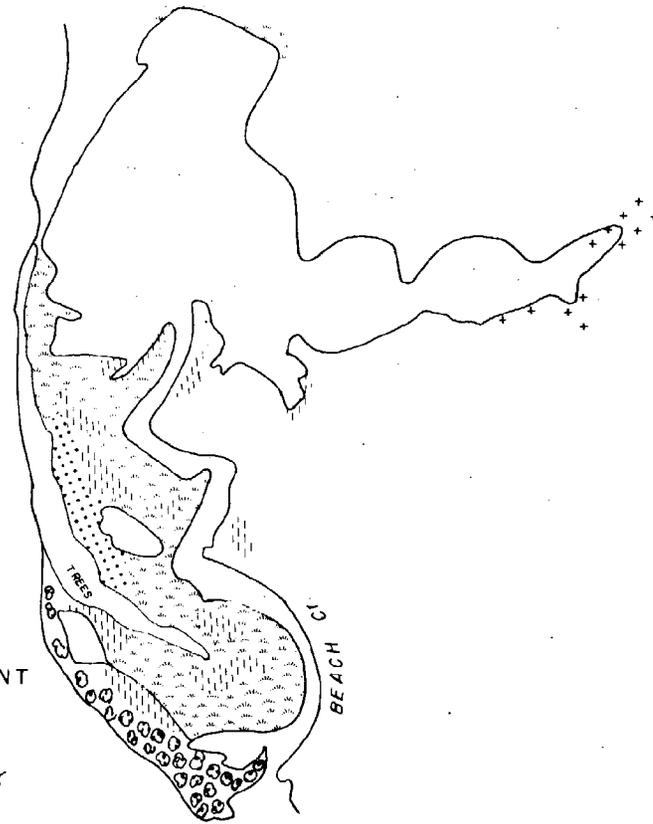


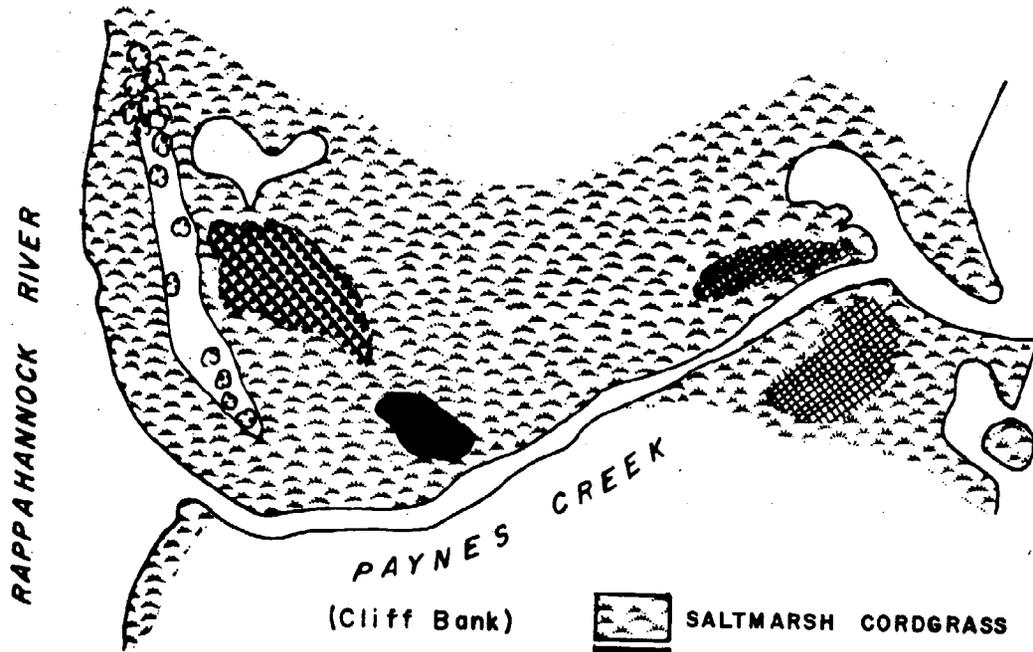
-  SALTMARSH CORDGRASS
-  BLACK NEEDLERUSH
-  SALTBUSH
-  SALTMEADOW HAY - SALTGRASS
-  CATTAILS

NO. 165

ROGUE POINT

RAPPAHANNOCK
 RIVER





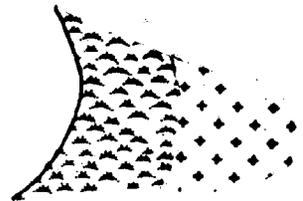
RAPPAHANNOCK RIVER

PAYNES CREEK
(Cliff Bank)

NO. 167

-  SALTMARSH CORDGRASS
-  SALTMARSH BULRUSH
-  SALTMEADOW HAY - SALTGRASS
-  BIG CORDGRASS
-  SALT BUSH
-  CATTAILS
-  WATER HEMP

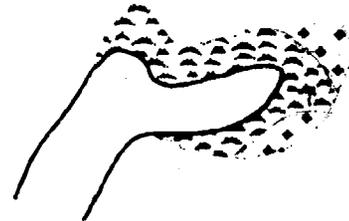
NO. 170



NO. 171



NO. 172



Section V. Part 1. Wyatt Creek to Paynes Creek

#	Place Name	Acres	Sa		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations	
			%	Acres	%	Acres												
166	Bulls Creek	9.5	20	1.9	30	2.8			30	2.8	20	1.9			2,800	302		
167	Paynes Creek	15	75	11.3			10	1.5	10	1.5			a	.7	6,000	400	Main marsh Sc, Sb	
168	Paynes Creek	3	45	1.3					10	.3			f	1.3	400	133	Right prong	
169	Paynes Creek	1.5	70	1.									f	.4	100	44	2nd prong	
170	Paynes Creek	2.5	50	1.2									f	1.2	400	160	3rd prong	
171	Paynes Creek	1.5	50	.7					20	.3			f	.4	200	133	Arm of 3rd prong c, e	
172	Paynes Creek	2	70	1.4									a	.6	600	300	Left prong	
	Sub-total Section V Part 1	66.0		38.0		9.2		2.9		9.9		1.9		4.8				

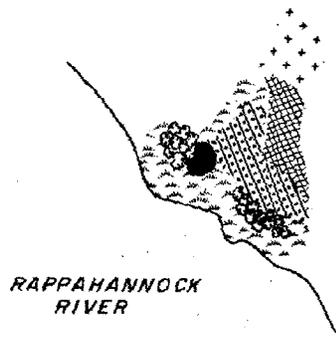
*Water Interface (ft.)** Interface/Ares Ratio
(feet/acre)

Sa = Saltmarsh Cordgrass
Jr = Black Needlerush
Md = Saltgrass Meadow
Sb = Saltbushes
Sc = Big Cordgrass
a = Saltmarsh Bulrush
b = Saltmarsh Fleabane

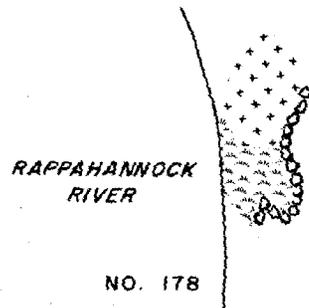
c = Saltmarsh Aster
d = Cattail
e = Marsh Hibiscus
f = Water Hemp
g = Switch Grass
h = Foxtail Grass
i = Arrow Arum

j = Pickerel Weed
k = Reed Grass
l = Olney Threesquare
m = Marsh Mallow
n = Saltmarsh Loosestrife
o = Smartweed

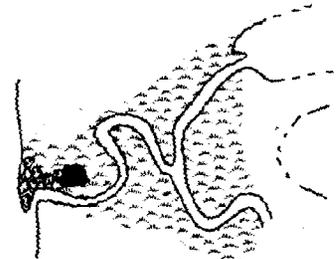
p = Wild Rice
q = Sea Lavender
r = Marsh Pink



NO. 177

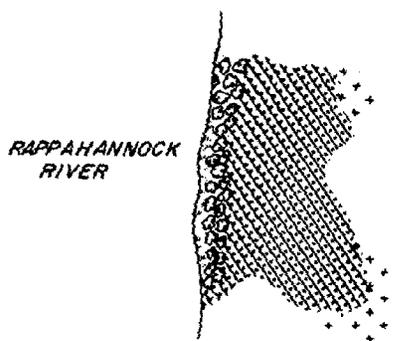


NO. 178

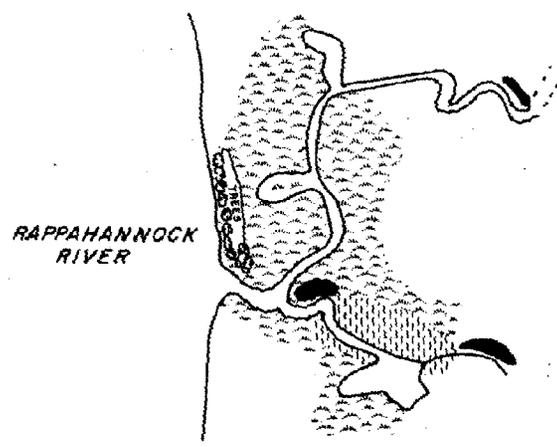


NO. 181

-  SALTMARSH CORDGRASS
-  SALTMEADOW HAY - SALTGRASS
-  SALTMARSH BULRUSH
-  BLACK NEEDLERUSH
-  CATTAILS
-  SALTBUSH
-  BIG CORDGRASS



NO. 182



NO. 183

Section V. Part 2. Greenvale Creek and Cage Creek

#	Place Name	Acres	Ss		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations		
			%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres					
173	Greenvale Creek Mouth	3.4																	
			----- dredged -----																
174	Greenvale Cr.	.75	95	.7	5										100	133			
175	Mid-Greenvale Creek	.5	85	.4									d 15		800	1,600			
176	Upper Greenvale Cr.	3	90	2.7					10	.3					800	266			
177	Rappahannock River	3	35	1.			25	.7	15	.4			a,d 25	.7	200	67			
178	Rappahannock River	3	40	1.2	40	1.2			20	.6					200	67	Sand berm		
179	Rappahannock River	2	40	.8									d 60	1.2	300	150	c		
180	Monaskon Area	3	10	.3							10	.3	d 40	g 40	1.2	1.2	0	0	Disturbed marsh f
181	Monaskon Area	8	80	6.4					10	.8	10	.8			3,200	400	Sc, a, o		
182	Airport Area	2	10	.2	70	1.4			10	.2			d 10	.2	200	100			
183	Cage Creek	14	70	9.8	20	2.8			10	1.4					4,600	328	Dead Iva Sc, a, g		
	Sub-Total Section V Part 2	39.75		23.5		5.4		.7		3.7		1.1		4.5					
	Total Section V	105.7		61.5		14.6		3.6		13.6		3.0		9.3					

*Water Interface (ft.) **Interface/Area Ratio (feet/acre)

- | | | | |
|--------------------------|---------------------|---------------------------|------------------|
| Ss = Saltmarsh Cordgrass | c = Saltmarsh Aster | j = Pickerel Weed | p = Wild Rice |
| Jr = Black Needlerush | d = Cattail | k = Reed Grass | q = Sea Lavender |
| Md = Saltgrass Meadow | e = Marsh Hibiscus | l = Olney Threesquare | r = Marsh Pink |
| Sb = Saltbushes | f = Water Hemp | m = Marsh Mallow | |
| Sc = Big Cordgrass | g = Switch Grass | n = Saltmarsh Loosestrife | |
| a = Saltmarsh Bulrush | h = Foxtail Grass | o = Smartweed | |
| b = Saltmarsh Fleabane | i = Arrow Arum | | |

Section VI

Belle Isle - Lancaster Creek Area

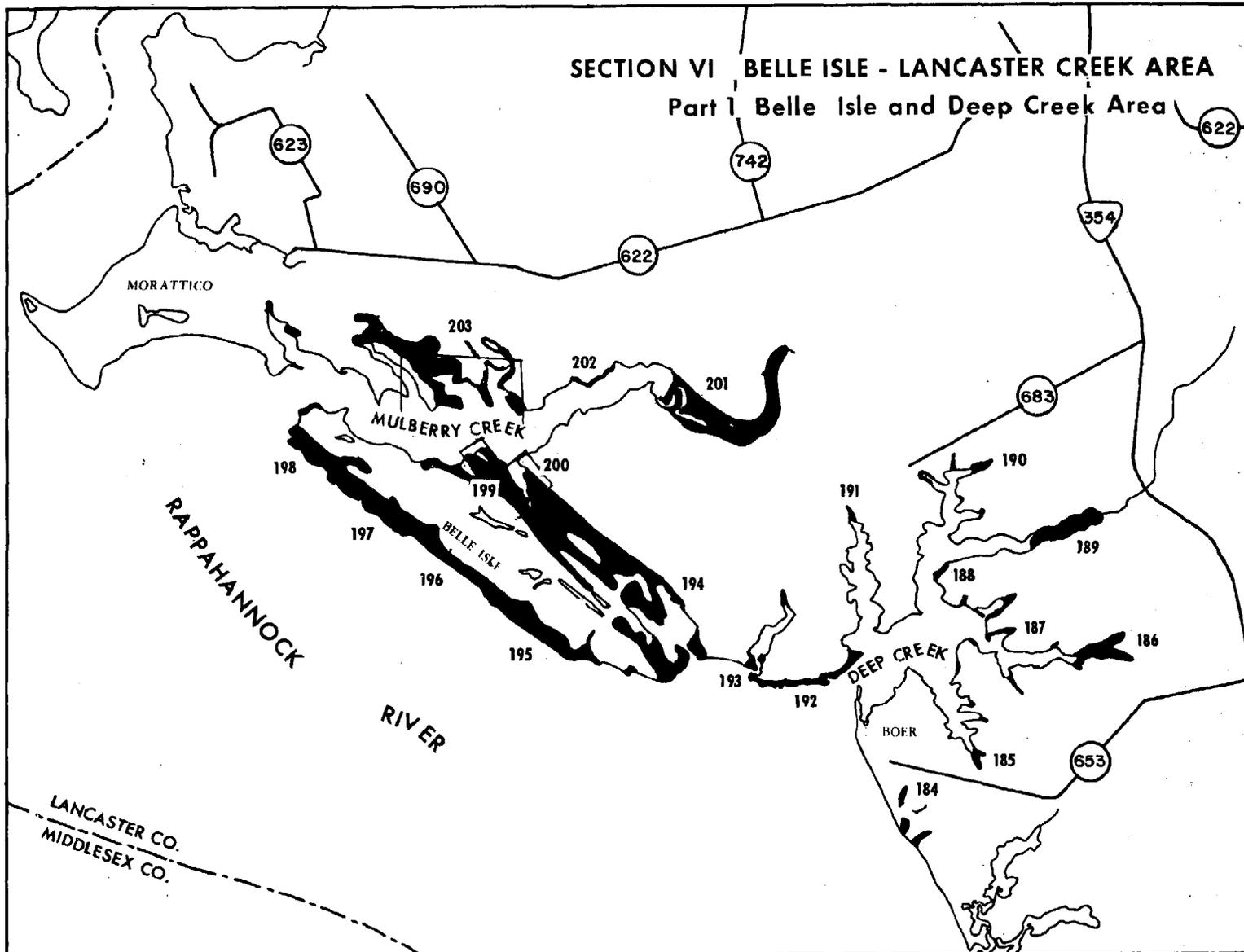
Belle Island marsh is the largest marsh in Lancaster County (156 acres). Because of its size and dissected pattern, i.e. marshes alternating with farmland and woodland, this marsh was subdivided in this study into several sections (194 through 200) in order to document the vegetation more effectively. The dominant vegetation in this marsh is the black needlerush.

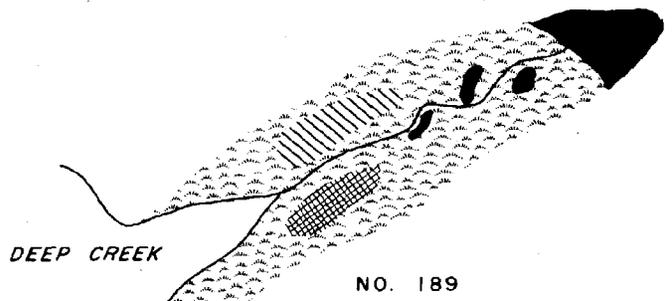
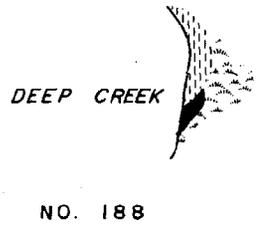
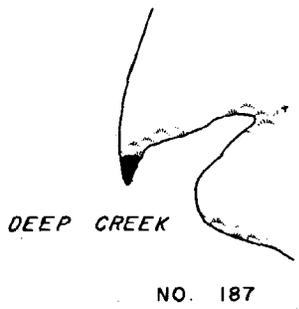
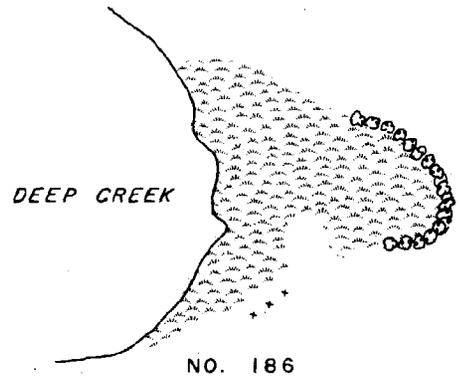
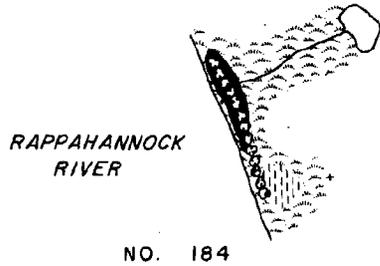
Although there may be negligible shoreline development in this area, there is a distinct possibility that interior parts of the marsh may be modified for cropland. There are indications that this practice has taken place in the past.

Lancaster Creek, the other major marsh system in this section, varies in character from brackish water to fresh water at its upper reaches. The most extensive part of the marsh can be classified as freshwater marsh with such species as cattail (Typha angustifolia), big cordgrass (Spartina cynosuroides), arrow arum (Peltandra virginica), pickerel weed (Pontederia cordata), and wild rice (Zizania aquatica).

Unlike the major headwater marshes of the county, the channels of this marsh are relatively deep and wide nearly to the ends of the branching marsh. The marshes of the northern branch of Lancaster Creek may be affected by excess sediments originating from clear-cut timbering practices and lack of adequate plant cover due to fire damage.

A large part of this marsh system lies in Richmond County. Of course, only the Lancaster County part has been inventoried and evaluated.





-  SALTMARSH CORDGRASS
-  BIG CORDGRASS
-  BLACK NEEDLERUSH
-  CATTAILS
-  SALTMARSH BULRUSH
-  SALT BUSH
-  SALTMEADOW HAY

Section VI. Belle Isle-Lancaster Creek Area. Part 1. Belle Isle-Deep Creek Area

#	Place Name	Acres	Ss		Jr		Md		Sb		Sc		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres											
184	Near Deep Creek	2.5	65	1.6	15	.4			15	.4	5	.1			1,000	400	a
185	Deep Creek	.75	70	.5									a, d 30	.2	100	133	e, c
186	Deep Creek	4	90	3.6									d 10	.4	1,800	450	Sb, c
187	Deep Creek	1	80	.8							10	.1	d 10	.1	400	400	
188	Deep Creek	.75	50	.4	40	.3					10				200	266	
189	Deep Creek	5	60	3.			10	.5			15	.7	a, b 15	.7	2,200	440	b, c

*Water Interface (ft.)** Interface/Area Ratio (feet/acre)

Sa = Saltmarsh Cordgrass	c = Saltmarsh Aster	j = Pickerel Weed	p = Wild Rice
Jr = Black Needlerush	d = Cattail	k = Reed Grass	q = Sea Lavender
Md = Saltgrass Meadow	e = Marsh Hibiscus	l = Olney Threesquare	r = Marsh Pink
Sb = Saltbushes	f = Water Hemp	m = Marsh Mallow	
Sc = Big Cordgrass	g = Switch Grass	n = Saltmarsh Loosestrife	
s = Saltmarsh Bulrush	h = Foxtail Grass	o = Smartweed	
b = Saltmarsh Fleabane	i = Arrow Arum		

-  SALT MARSH CORDGRASS
-  BLACK NEEDLERUSH
-  SALTMEADOW HAY
-  SALTMEADOW HAY - SALTGRASS
-  BIG CORDGRASS
-  SALTBUSH
-  OLNEY THREESQUARE

DEEP
CREEK

NO. 190

RAPPAHANNOCK
RIVER

NO. 193

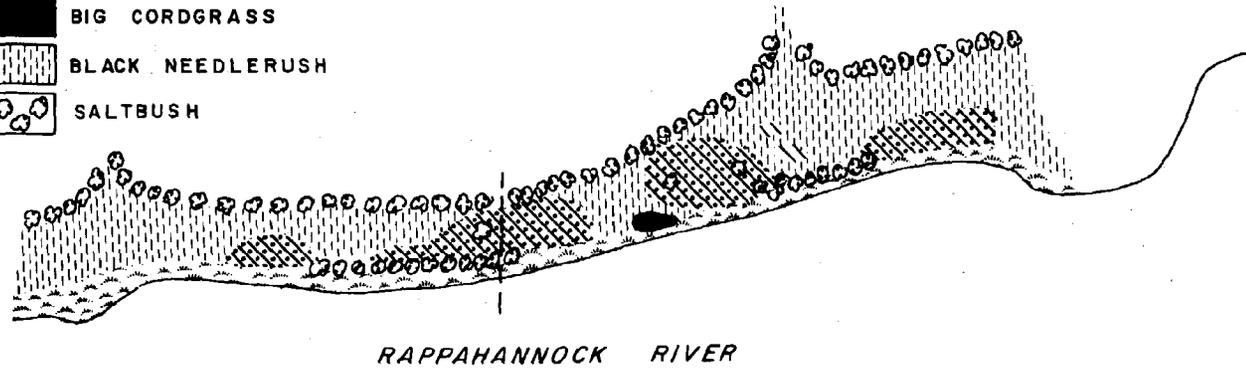
RAPPAHANNOCK
RIVER

NO. 194

ROAD

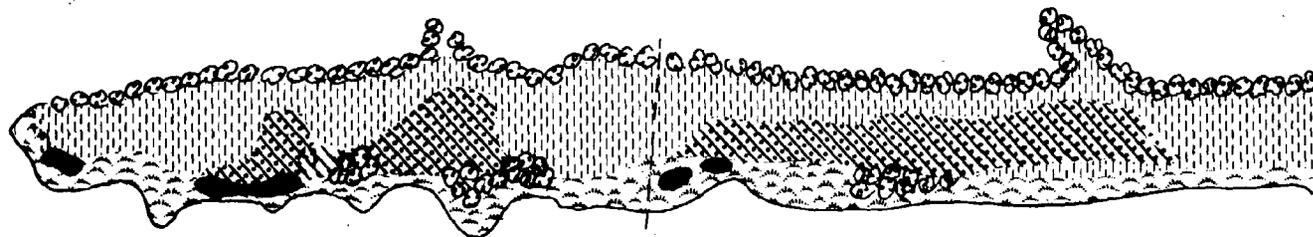
TREES

-  SALTMARSH CORDGRASS
-  SALTMEADOW HAY
-  SALTMEADOW HAY - SALTGRASS
-  BIG CORDGRASS
-  BLACK NEEDLERUSH
-  SALTBUSH



NO. 196

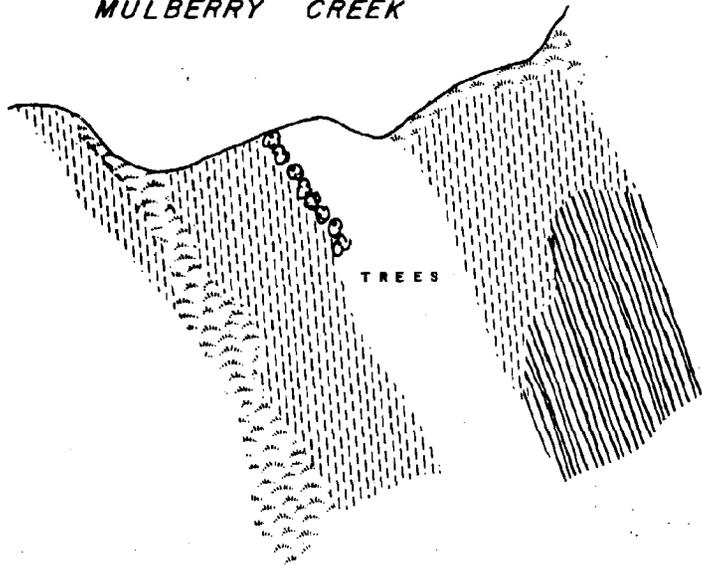
NO. 195



NO. 198

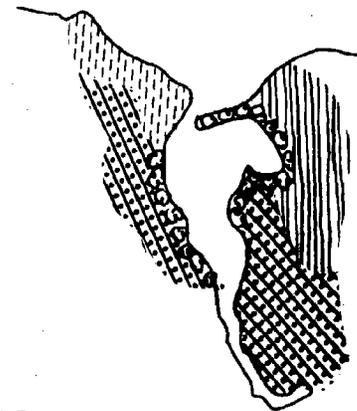
NO. 197

MULBERRY CREEK



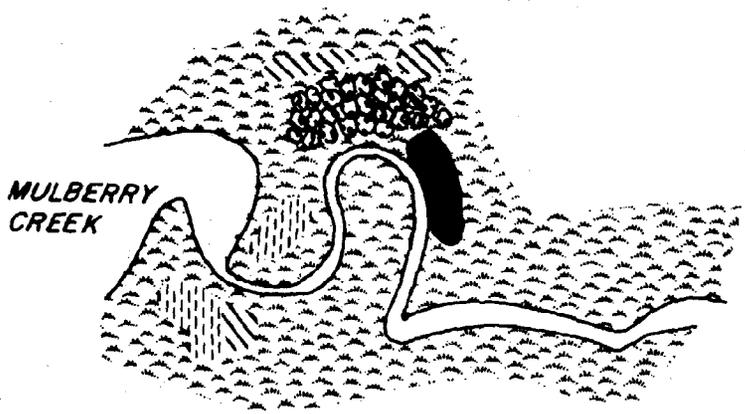
NO. 199

MULBERRY CREEK



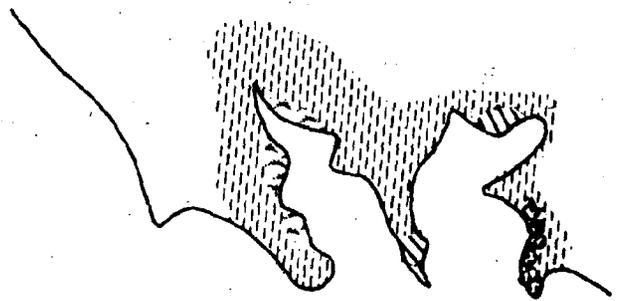
NO. 200

-  SALTMARSH CORDGRASS
-  BLACK NEEDLERUSH
-  SALTMEADOW HAY - SALTGRASS
-  SALT BUSH
-  OLNEY THREESQUARE



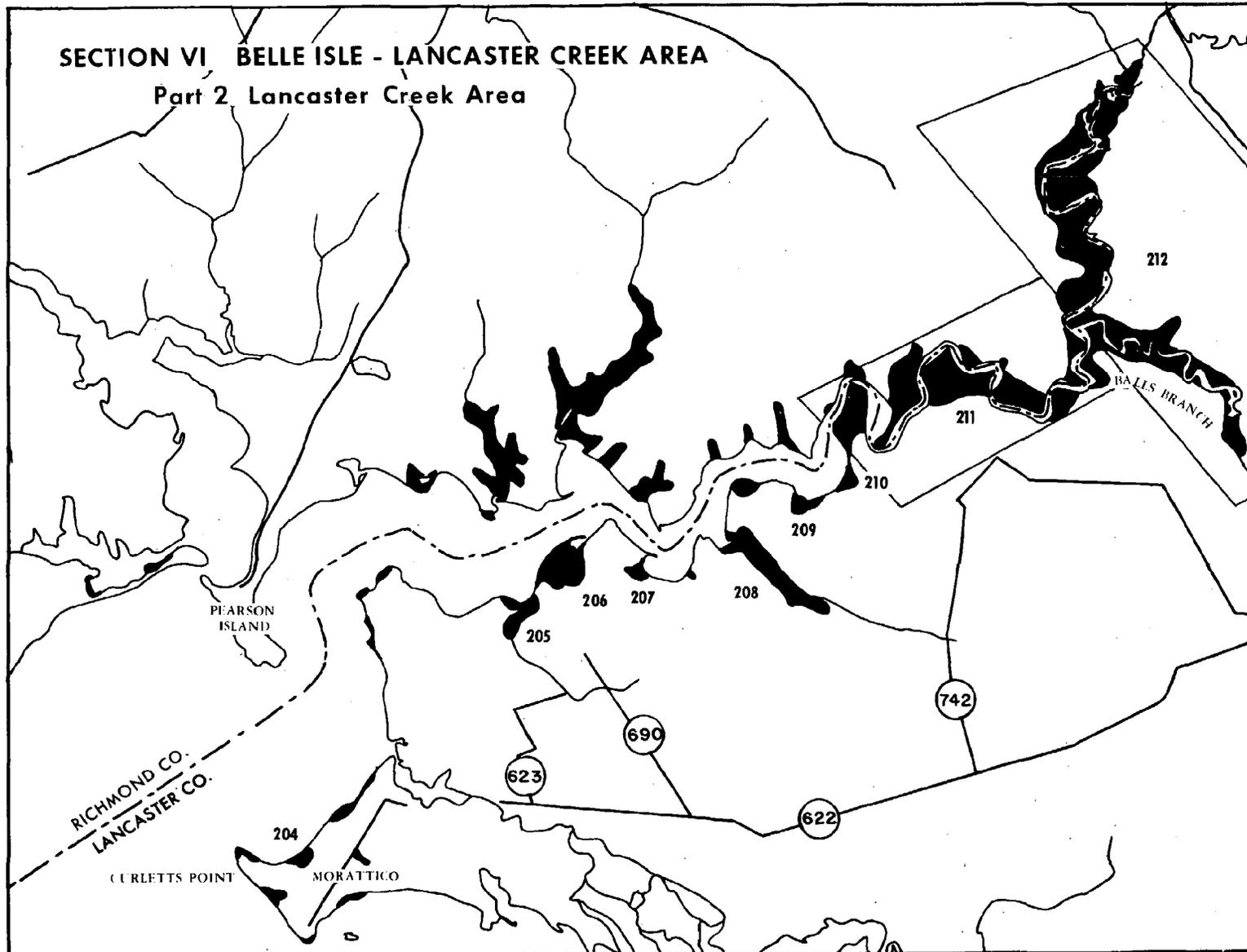
NO. 201

-  SALTMARSH CORDGRASS
-  BLACK NEEDLERUSH
-  BIG CORDGRASS
-  SALTMEADOW HAY
-  SALT BUSH



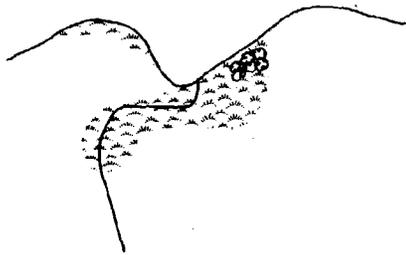
MULBERRY CREEK

NO. 203

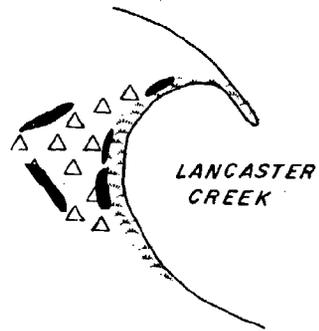


-  SALTMARSH CORDGRASS
-  BIG CORDGRASS
-  SALTMARSH BULRUSH
-  WATER HEMP
-  SALT BUSH

LANCASTER CREEK



NO. 205



NO. 207



DEVELOPMENT

NO. 208

Section VI. Part 2. Lancaster Creek Area

#	Place Name	Acres	S _a		J _r		M _d		S _b		S _c		Other		WI*	I/AR**	Observations
			%	Acres	%	Acres											
204	Morattico Area	26	30	7.8	30	7.8			10	2.6	30	7.8			2,400	92	Series of small marshes
205	Lancaster Cr.	1.5	90	1.3					10	.15					2,400	1,600	b,c
206	Lancaster Cr.	15	20	3.	60	9.					20	3.			1,600	106	Shallow water Sc fringe
207	Lancaster Cr.	1.5	20	.3							20	.3	f 60	.9	600	400	b,c
208	Lancaster Cr.	15	10	1.5							70	10.5	a,d 20	3.0	4,400	293	Development, Shallow water, b,c,e,m
209	Lancaster Cr.	1.5			40	.6					20	.3	l 40	.6	600	400	Sc fringe
210	Lancaster Cr.	1.5	20	.3							80	1.2			400	266	

*Water Interface (ft.)**Interface/Area Ratio (feet/acre)

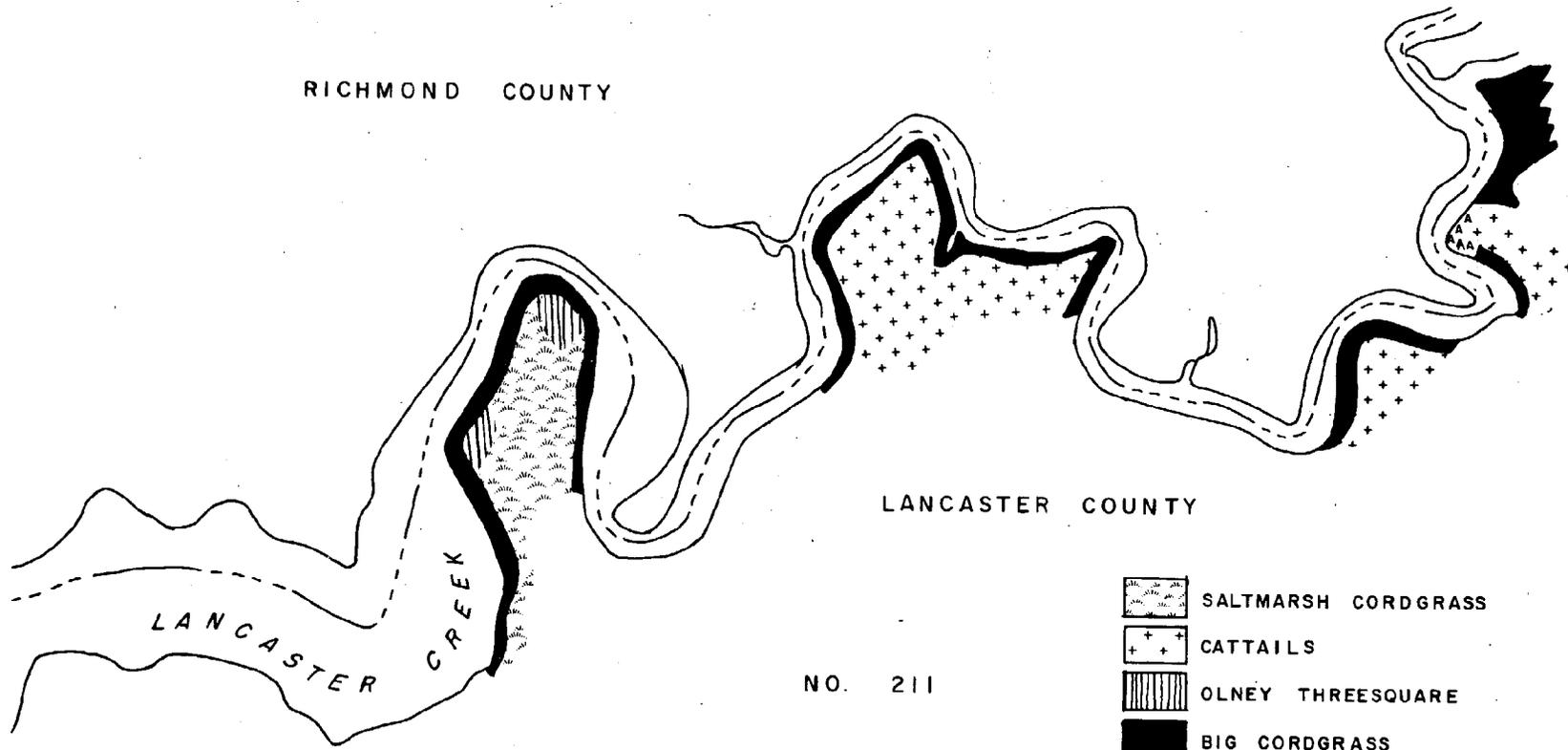
S_a = Saltmarsh Cordgrass
 J_r = Black Needlerush
 M_d = Saltgrass Meadow
 S_b = Saltbushes
 S_c = Big Cordgrass
 a = Saltmarsh Bulrush
 b = Saltmarsh Fleebane

c = Saltmarsh Aster
 d = Cattail
 e = Marsh Hibiscus
 f = Water Hemp
 g = Switch Grass
 h = Foxtail Grass
 i = Arrow Arum

j = Pickerel Weed
 k = Reed Grass
 l = Olney Threesquare
 m = Marsh Mallow
 n = Saltmarsh Loosestrife
 o = Smartweed

p = Wild Rice
 q = Sea Lavender
 r = Marsh Pink

RICHMOND COUNTY

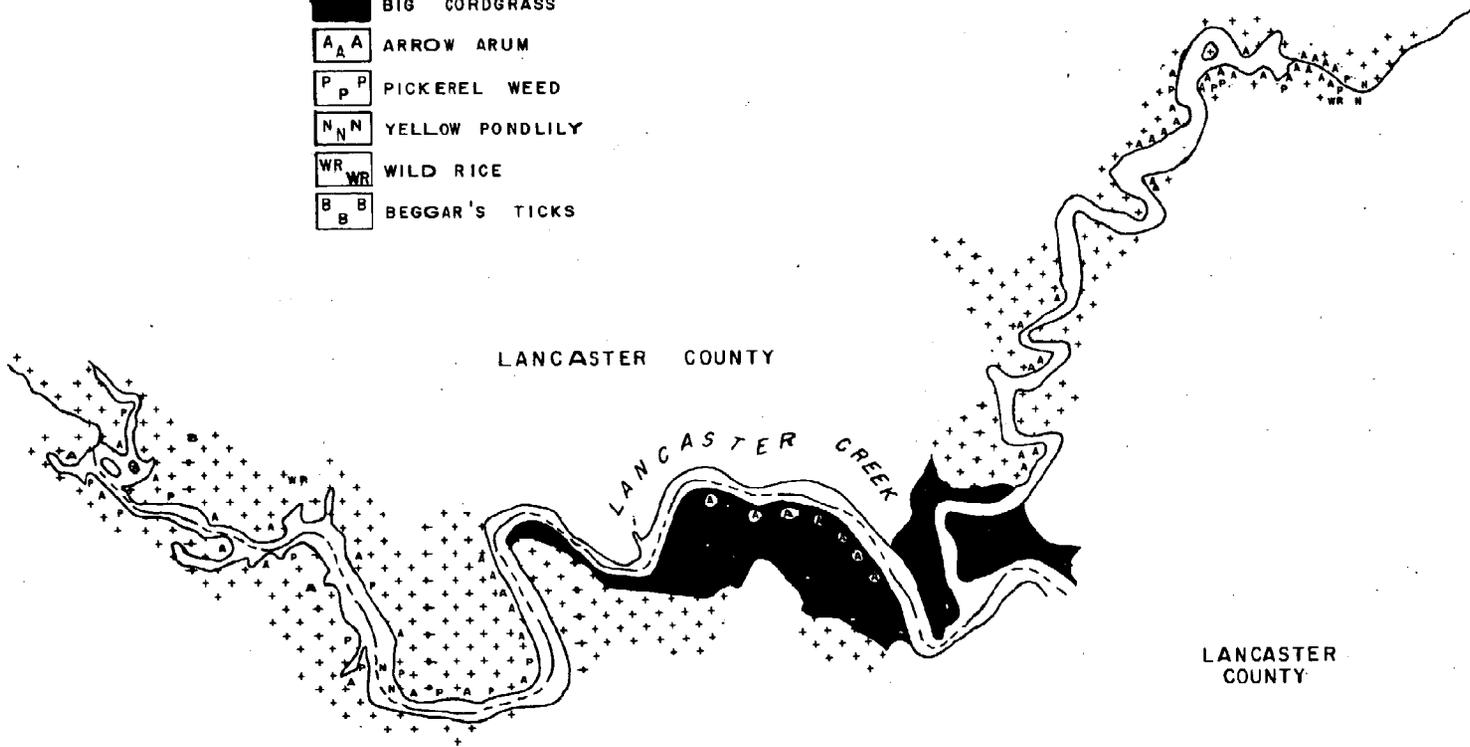


LANCASTER COUNTY

NO. 211

- | | |
|---|---------------------|
|  | SALTMARSH CORDGRASS |
|  | CATTAILS |
|  | OLNEY THREESQUARE |
|  | BIG CORDGRASS |
|  | ARROW ARUM |

- + + + CATTAILS
- BIG CORDGRASS
- A A A ARROW ARUM
- P P P PICKEREL WEED
- N N N YELLOW POND LILY
- WR WR WILD RICE
- B B B BEGGAR'S TICKS



RICHMOND COUNTY

NO. 212

